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ENDOCRINES IN GYNAECOLOGY *

BY

ALECK BOURNE, M.B., F.R.C.S., F.R.C.O.G.

There is no doubt that the discovery of the sex hormones has conferred an enormous boon on the drug manufacturers, but we cannot be so confident of the benefit to the suffering patient. After the early experiments which demonstrated their striking effects on the structure and function of the genital system of laboratory animals we had high hopes that they would exert comparable effects when used for the treatment of pelvic disorders in women. But with some well-defined exceptions we have been grievously disappointed. The reasons why this should be are not far to seek. This branch of medicine was initiated in 1917 by the observation by Stockard and Papanicolaou that injection of the liquor of the Graafian follicle produced oestral changes in the vaginal mucosa. From this fundamental discovery has been built up our knowledge of the secretions of oestrogen and progesterone; of their effect on the development of the genital tract, and on the cyclic changes of the endometrium; later, of the gonadotrophins of the pituitary and their relation to the ovary. The greater part of this work during thirty years has been done by experimental work on small animals and monkeys.

Difficulties in Clinical Use

Herein lies the first reason for clinical disappointment. It was hoped and expected that the precise result obtained by injecting this or that hormone into rats and rabbits would be similarly obtained with the human patient. But the mechanism of the endocrine system is infinitely complex, not only in the individual species but also in its variations in different species even closely allied. It was soon realized that deductions made from observation of one animal could not safely be made for another species, and still less where the other species was human. Moreover, the experimental work has been done on either normal animals or those which have suffered a severe and totally mutilating operation, such as ablation of the pituitary gland. Our patients are not normal animals nor have they been subjected to severe surgical mutilation, except, rarely, by removal of both ovaries. Clinical experience has shown that deductions made from the reactions of animals to hormone treatment cannot be applied to parallel treatment of the pelvic disturbances of women.

A further difficulty is adequate dosage for the human subject. Whereas the synthetic oestrogens can now be given in any amount it is probable that the substitute pituitary hormones (chorionic gonadotrophin and mare's serum hormone) can be given only in doses totally inadequate for the proportional weight of a woman. As the pituitary hormones—the gonadotrophins—are the prime movers of ovarian function, it is impossible to influence ovarian function, for example folliculation, except by the appropriate gonadotrophin in sufficient dosage. So far it has been impossible to synthesize these extremely complex bodies, and I am told there is also little prospect of success in the future. Fortunately, hormones can be extracted from the urine of pregnant women and the serum of the pregnant mare, which can be obtained in larger amount for clinical purposes than from the pituitary itself, but the available doses of even these pituitary-like hormones are probably far too small to exert an appreciable clinical effect.

The rhythmical secretion of the sex hormones of the pituitary and ovary introduces a further complication in therapy. It is necessary to know the details of the rhythm of normal secretion if we wish, with some hope of success, either to apply reinforcement to subnormal activity or to counter the action of an oversecretion. During the first fortnight of the menstrual cycle the pituitary produces its follicle-stimulating hormone and the ovary oestrogen, while during the second two weeks the pituitary secretes its luteinizing hormone and the ovary progesterone with less oestrogen. For any given complaint, therefore, we should know not only whether there is an excess or deficit of the particular hormones responsible but also the time in the cycle when the therapeutic hormone should be given. In other words, unless the correct hormone is given at the right time in the menstrual cycle there cannot be any improvement; indeed, the patient may be worse.

But after we have noted the difficulties dependent upon the differences of the species, inadequate dosage, and timing, perhaps the greatest of all is the complexity which arises in the human subject by reason of the profound effect of the highly organized emotional system on the hormonal function of the pituitary. We see this in our gynaecological practice almost every day. Amenorrhoea and certain cases of menstrual excess so often follow emotional storms of one kind or another that it is impossible to deny the association. It is probable, too, that toxic goitre, even sterility and many other states, similarly depend on interference with pituitary function by anxiety, fear, and anger; while, *per contra*, we may perhaps attribute a smooth function—or euphoria, as the Greeks called it—to contentment, exaltation, and translation out of ourselves. We may be correct in assuming the basic effect of oestrogen in man from the experimental evidence gained from the small animals, but the result of any given treatment may be totally different from what we should expect from purely physiological considerations, because of the incalculable effect of emotional interference with the functions of the pituitary body. A good example is the treatment of the

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menopause by stilboestrol. Sometimes the patient finds complete relief from her flushes and sweats; but those women who are emotional or "temperamental," especially if they have had unhappy years, will find little improvement. But at this period the basic physiology is the same in most if not all women. The ovaries atrophy, probably owing to the cessation of the secretion of pituitary gonadotrophins. Menstruation ceases, and usually there are various subjective symptoms. The latter, however, are extraordinarily variable both in degree and in responsiveness to hormone treatment. Their intensity depends less on the actual hormonal imbalance than on the influence of temperament and the level of happiness and content during previous years of married life.

Endocrine Receptors

There is still one more unknown factor which may be important in endocrine therapy. I have seldom seen it mentioned, and never considered, in therapeutics. I refer to what I call endocrine receptors. When, for example, a large dose of oestrogen is injected into an adult female certain definite changes are found in certain organs, and those organs only. The endometrium proliferates, the uterus of the immature animal grows, and the vaginal mucosa cornifies. But there are no other demonstrable changes (except possibly indirect) in most other tissues of the body. It is doubtful if after millions of units the alimentary mucosa, for example, would show the slightest change at all. It is necessary, therefore, to postulate the existence of receptor substances in the vaginal mucosa, the endometrium, and a few other tissues, which are able to grasp the oestrogenic molecule and, perhaps by chemical union, enable it to perform its specific function. I visualize the characteristic changes in the reproductive organs as being the result of a dual and co-ordinated action of two substances—the activator and the receptor. In our therapeutics we consider only the activator—the hormone—but it may be that failure of the expected result to follow is due to absence of its vaginal or uterine receptor, without which it is powerless to exert its specific function. How far subsequent research may reveal and identify visceral receptors we do not know, but until we know something about them our endocrine therapy must remain largely empirical. It is possible that many pathological disturbances, such as amenorrhoea, are due to failure not of the appropriate hormonal secretion but of their necessary receptors in the ovary and uterus.

I have recently investigated a case which illustrates the existence and absence of these receptor substances. Briefly, a woman of 36 had had amenorrhoea for five years due to no apparent cause. Radiography and the sound show the uterus to be atrophied, and the curette could not remove more than the smallest fragments of endometrium for the microscope. The sections reveal no evidence whatever of oestrogenic action, and as the uterus has atrophied both in structure and in function we must assume that it has not received the oestrogenic stimulus. But in this woman the curious thing is that the vaginal mucous membrane manifests quite strongly that oestrogen is circulating in the blood stream. For example, the acid reaction gives a reading of the normal *p*H 4.5 by the universal indicator; the smear of its secretion shows an enormous number of Doederlein's acid-forming bacilli, and the histology of the epithelium reveals a very large amount of glycogen, similar to that of normal women during the child-bearing period. These features of the vagina are proof that oestrogen is present in the body in normal amounts, and yet the uterus is unable to receive it and so exhibit the ordinary histology and development characteristic of the presence of the circulating oestrogen. My inference is that, while the vagina is able to react, the uterus lacks something by which it also can react.

If this inference is true, should we not review some of our endocrine therapeutic failures from a different angle? From the evidence of animal experiments we are entitled to expect certain results from the sex hormones, especially when we work with ostrogen and progesterone, which can be injected in reasonable doses. But often in clinical medicine we are disappointed. Is this failure possibly due to the fact that we are using the wrong substance, and if we could replace a missing receptor—as in my illustrative case—should we not immediately see the expected reaction? It is obvious that we need more research on the tissues or soil on which the sex hormones normally act. The earlier years of the science of bacteriology were conspicuous for the same omission. The organisms were explored in the minutest detail, but the tissue cell and fluid resistance was largely neglected. Now we know that in the phenomena of infection the organism is only part, perhaps a small part, of the whole process of infective disease. Indeed, in this branch of medicine it is now recognized that the reaction of the tissues to the microbic assault is at least equal in importance to the biology of the microbes themselves. When, therefore, we consider all the difficulties which beset endocrine therapy—the correct hormone, its dosage and timing in the menstrual cycle, the effect of the emotional life, and the ignorance and neglect of receptors—it is surprising not that we find many failures but that we have any success at all.

Treatment by endocrine hormones has, however, definite fields of usefulness, and there is a wide fringe of partial or occasional success which will vary according to the faith of the patient in her doctor and to his confidence in the value of his injection. Endocrinology offers perhaps the widest scope in the whole of medicine for treatment by confidence. Where symptoms rather than signs are the object of treatment—such as the menopausal syndrome as opposed to the undeveloped uterus—we find the chief success. On the other hand, in the certain suppression of lactation there is a specific organic result of the action of oestrogen.

Hormones and Their Functions

Let us consider, first, what hormones we have at our disposal. By far the most important is one or other of the oestrogens. The natural oestrogens commonly used are oestradiol benzoate, oestrone, and oestriol, sold under different trade names by different makers. The synthetic oestrogens are stilboestrol, hexoestrol, and dienoestrol, the two latter being one-sixth and one-tenth as potent, weight for weight, as stilboestrol. They have the advantage over the natural oestrogens in that they are soluble in water and can be given by mouth. Oestrogen therapy is convenient, precise, and sufficient in dosage. The second ovarian hormone is progesterone, the product of the corpus luteum. In the process of its metabolism it is "denatured" and finally excreted in the urine as the inert water-soluble pregnanediol. Unfortunately for therapeutics, progesterone must be extracted from the corpus luteum, which means that the available dosage will be small and expensive. The synthetic product, sold as ethisterone, can be given by mouth; but it is much less potent, and is also scarce and expensive. It is indeed unfortunate that we have no adequate treatment by the corpus luteum, for it is one of the most important of all the sex hormones from the point of view of therapeutics. Lack of progesterone in adequate dosage is responsible for most of the failures in treating common conditions like amenorrhoea and dysmenorrhoea. The two hormones oestrogen and progesterone work so closely together—as, for example, in forming the progesta-

tional endometrium and the decidua—that, with two or three exceptions, it seems almost hopeless to produce any therapeutic results by giving oestrogen alone, as is so often done.

The anterior pituitary secretes two well-recognized sex hormones. One is the follicle-stimulating hormone formerly called prolan A, which stimulates the maturation of the Graafian follicle and production of the ovum; the other is a hormone which initiates the corpus luteum after rupture of the follicle. It was formerly known as prolan B, but is now commonly known as the luteinizing hormone. If we were dependent upon the pituitary alone as the source of these hormones there would be no practical use for them in clinical medicine, as the gland is so small and the yield insignificant. But it so happens that the serum of the pregnant mare during the middle of her pregnancy contains large quantities of the follicle-stimulating hormone, which can be extracted and put up in fair dosage. It is sold by various makers as "serogan," "antostab," "gestyl," and "gonadyl" in doses of from 200 to 3,000 units. The second gonadotrophin, the luteinizing hormone, can be obtained from the urine of pregnant women. It is not precisely the same substance as that secreted by the pituitary, but is very similar in its effect. It is produced by the chorionic cells of the placenta, whence its name—chorionic gonadotrophin.

Before we dwell upon the practical value of the sex hormones in therapeutics let us pause to consider their chief functions. The proximal group is the pituitary secretions. It is believed that during the first two weeks of the menstrual cycle the follicle-stimulating hormone is produced. Under its influence a single immature Graafian follicle ripens, secretes oestrogen, and dehisces the ovum on the 13th day, though this date is by no means constant. At the moment of rupture of the follicle the secretion of this hormone ceases by reason of a reciprocal inhibitory action of the follicular oestrogen on the secretion of the pituitary follicle-stimulating hormone. During the second fortnight is secreted the luteinizing hormone, whose function is to convert the follicle and maintain the corpus luteum and its hormone, progesterone. In its turn the secretion of the luteinizing hormone ceases, the corpus luteum degenerates during the next thirty-six hours, and menstruation begins. So far as we know, the pituitary gonadotrophins have no other function than these actions upon the ovarian follicles and corpus luteum. It is improbable that the story is as simple as the alternating action of two separate hormones. It is more likely that other ovariotrophic hormones exist which, for example, control the rupture of the follicle and together form a complex group of gonadotrophins. Of the "terminal" ovarian hormones, oestrogen is the best known. It is essentially the oestrus-producing hormone, but other changes it induces are the growth of the genital tract at puberty, the conversion of the endometrium into its proliferative phase after menstruation, and the cornification of the vaginal epithelium. Its action, preceding that of progesterone, is necessary for the appearance of menstruation.

Progesterone has been employed to a smaller extent than oestrogen because the difficulty of synthesis makes it impossible to provide large enough doses. Its chief function is to produce the secretory or progestational phase of the endometrium, in readiness to receive the fertilized ovum. Immediately the ovum is fertilized the endometrial change is carried a step further to form decidua. The integrity of the decidua is dependent upon the secretion of progesterone until about the fifth month; for if during this time the corpus luteum is removed or fails in its secretion—as shown by a low excretion of pregnanediol in the urine—the decidua breaks down and haemorrhage follows as the uterus aborts. It was formerly thought that progesterone was a kind of uterine sedative, but it is now known that the uterus is irritated through the influence of posterior pituitary extract to a greater extent during the luteal phase of the cycle than during the oestrogen or post-menstrual phase. A practical example is that usually progesterone given for dysmenorrhoea before the period makes the pain worse. It is incorrect to think of the ovarian hormones as having wholly separate and independent functions. They certainly induce different changes in the endometrium; but no normal function, whether it be menstruation, conception, pregnancy, or, probably, labour, can take place unless they work in harmony. The earlier view that oestrogen and progesterone were "antagonistic," though correct in a limited sense, has impeded the progress of successful endocrine therapy by leading us to neglect the idea of their synergism, and to think only of their antagonism.

Therapeutic Value of Sex Hormones

Having sketched the great difficulties of practical clinical application of the sex hormones and touched on their functions, what now of their therapeutic value? The main clinical problems, such as amenorrhoea, menorrhagia, dysmenorrhoea, sterility, and the menopause, seem to be due to deficiency or excess and disordered rhythm of their production. But of this we are not sure, for the disturbance may be due to disproportion of secretion of one hormone relative to another. It always amazes me to hear some physicians talk of the hormonal defects of one or other of their patients. They say with confidence and precision which hormone is lacking or excessive and just how the trouble can be compensated by giving a grain of this or a milligram of that.

If we divide the sex-organ disabilities into those which are functional or subjective and those which are objective or organic, and examine the effects of treatment by hormones of each group, we shall be better able to appraise their true value. It is not easy to draw a sharp line between the so-called functional and organic conditions, for there are always likely to be some structural changes, even if at the beginning they are only microscopic. But in general we mean by functional conditions those which are not associated with organic conditions discoverable by ordinary clinical, *x*-ray, or other examination. Of the organic states often treated by hormones the chief are pelvic hypoplasia or underdevelopment as a cause of amenorrhoea or sterility, lactation when it is necessary to suppress it, atrophy of the vulvo-vagina (kraurosis), leucoplakia, and metropathia. If we are honest with ourselves we must admit that the only certain success in treatment is the suppression of lactation by the oestrogens. If we give 15 mg. of stilboestrol daily for three or four days we can assume that engorgement will disappear and lactation will cease.

In cases of pain in older women due to atrophy of the vulva (kraurosis), or senile vaginitis due to a pyogenic infection, there is frequently either complete cure or much relief following oestrogen therapy, within three or four weeks. Similarly, some cases of chronic vulvo-vaginal infection in children will also clear up after the use of vaginal pessaries of 1,000 units of oestrogen.

But if the pain of kraurosis is relieved by oestrogen it is certain that leucoplakia, which is an epidermal hypertrophy and always a new growth in its late stages, not only is not improved but is probably increased. No form of anaerobic infection of the vagina, as by the common enterococcal streptococcus—sometimes associated with the symbiotic *Trichomonas*—is touched by oestrogen therapy, because these organisms can live comfortably in the acid

medium of the vagina, which is increased by oestrogen. One of the commonest and most serious states is pelvic hypoplasia. Here we have failure of complete development of the uterus, and often of the vagina and vulva. There may be full development of the secondary sex characters, or the woman may show some degree of virilism. Usually she is apparently a normal woman except that puberty was late, menstruation is imperfect, perhaps absent, sometimes but by no means always painful, and if she is married she may complain of vaginal dyspareunia and sterility. It is difficult to diagnose uterine hypoplasia by clinical examination: it can be proved only by comparative *x*-ray shadow or the uterine sound. I am convinced that no amount of combined oestrogen and progesterone treatment can add half a centimetre to the uterine stature. In some of these cases amenorrhoea can be apparently cured, so long as the oestrogens are given, by producing the so-called withdrawal haemorrhage; but primary amenorrhoea can never be cured, and that form of amenorrhoea which is secondary to early uterine atrophy—not necessarily a true menopause—also can never be cured by the sex hormones. Where, therefore, amenorrhoea is "organic" it can seldom if ever be replaced by a normal regular and permanent menstruation.

Sterility offers a different problem. It is certain that the underdeveloped uterus presents no difficulty to embedding of the fertilized ovum, even if the progestational phase of the endometrium is imperfect, because we know that the ovum can embed itself in the tube or even the ovary. The failure of conception is probably due to the associated failure of ovulation where the uterus is underdeveloped. The small uterus is the chief clinical evidence of smallness of function, including ovulation. The problem of sterility in these cases is therefore how to treat function by producing ovulation; the condition of underdevelopment is less important. In the follicle-stimulating hormone of the pregnant mare's serum we hoped that we might have a means of inducing ovulation. I have used it many times in doses of 1,000 units in carefully selected cases during the post-menstrual ten days, but in only one woman has conception occurred after treatment during three months. Pregnancy progressed to term, and at last, after eight years of trying to conceive, she has got her baby. In no other case can I honestly say that the serum gonadotrophin has possibly worked. Many schemes of hormone therapy have been used for sterility of all kinds, and here and there successes have been claimed, but we must remember that the arm of coincidence is long, especially when dealing with such a condition as sterility.

Another organic condition is metropathia (it should be named oophoropathia), causing profuse and irregular haemorrhage. It is probably true that the irregularity of haemorrhage in cycle, duration, and amount is due to disordered rhythm of production of the follicle and corpus luteum. During the periods of bleeding no corpus luteum exists in either ovary, and the endometrium shows an intense oestrogenic stimulus. One ovary contains unruptured follicles the fluid of which is much more highly charged with oestrogen than the normal Graafian follicle. The obvious endocrine treatment is therefore to give an anti-oestrogen—progesterone or testosterone. Scowen (quoted by Bishop) has shown that very large doses of progesterone (20 mg. on alternate days) will effect improvement lasting for many months after ceasing the injections. A more certain remedy is testosterone propionate, but again the doses must be large (20 mg. twice weekly). This male hormone acts by overcoming the female oestrogen and ultimately inducing genital atrophy and virilism. It must therefore be used with great caution. Whatever improvement short of atrophy may be induced is temporary in moderate or advanced cases, and most of these patients must submit to *x* rays or hysterectomy according to their age. Mild cases of excessive loss with irregularity can often be controlled for a while with progesterone, but the treatment is expensive and unreliable. Among the truly functional conditions there are the menorrhagia of puberty and the subjective symptoms of the menopause. Certain cases of spasmodic dysmenorrhoea form a large group, and many attempts have been made to treat repeated threatened abortion and inertia in labour, of which many cases are functional. As a means of inducing premature labour oestrogen is quite unreliable even when given in such doses as half a million units. The disorders which can be grouped as sexual frigidity or "functional" dyspareunia are entirely unresponsive to oestrogen. The haemorrhage of puberty, like that of metropathia, is probably due to failure to establish ovulation, with the consequent deficient secretion of progesterone. The child is under the influence of an uncontrolled action of oestrogen which produces oestral haemorrhages and not true menstruation. When investigating these cases many years ago Dr. Charles Wilson (now Lord Moran) and I found evidence that these patients were in a state of hypothyroidism as measured by the basal metabolic rate. If this is generally true it may be that thyroid deficiency is no more than a side issue of general endocrine incoordination. Some enlargement of the thyroid is often seen at the age of puberty, and in such cases I always give small doses of thyroid extract or iodine. The logical treatment, as in the case of metropathia, is to give large doses of progesterone, but in my experience this is seldom the right course. Most of these children are being pushed for school examinations. They are overworked, tired, thin, pale, and sometimes anxious about the school certificate. The best treatment is to rest them by removing them from school for a term and keeping them in bed during the days of worst bleeding. Really serious cases are very rare, and nearly all of these patients soon become normal.

In dysmenorrhoea we have the biggest problem of all, as is manifest by the multiplicity of methods of endocrine treatment. Of the many theories advanced to explain severe first-day pain, my own view is that it is caused by intense uterine contraction with coincident spasm of the internal os—as we often see in painful first-stage labour—producing obstruction to the outflow and ischaemia of the muscle. It is indeed uterine colic. The uterus seems to lack polarity, or co-ordination between fundal contraction and cervical relaxation. The worst case of dysmenorrhoea I ever saw was in a woman, previously without any monthly pain, for whom I amputated the cervix. Severe pain immediately followed the operation, and on investigation, after the second painful period, under anaesthesia I had the greatest difficulty in passing a filiform bougie. When, however, I had finally dilated the stenosed os by a tent, the pain entirely disappeared. In the less severe cases almost any treatment, especially if given by injection, may be successful for a few months. The rational therapy would be some measure which relieved the irritability of the uterine muscle and at the same time relaxed the spasm of the internal os. In practice we find that progesterone before the period is not only useless but may actually increase the pain, just as it often expedites threatened abortion by stimulating the uterine response to posterior pituitary extract. It is also useless to treat dysmenorrhoea on the supposition that the uterus is underdeveloped, for Jeffcoate has shown that pain is caused by the normal uterus equally with the small uterus. Oestrogens, given during the post-menstrual week in rather large doses—5 mg. daily—may relieve pain by inducing an anovular cycle, but there is nothing

approaching certainty either by this or any other form of hormone treatment.

The subjective symptoms—flushing, sweating, and many nervous symptoms—of the natural menopause are nearly always relieved or even abolished by oestrogen. It is necessary to impress on the patient that stilboestrol or dienoestrol must be taken only intermittently—say for two weeks, followed by one week without treatment—and that it should not be continued indefinitely. Many cases of post-menopausal bleeding which we see to-day are found in women who have been taking stilboestrol literally for years. They suffer from an intensely oestrogenic proliferative endometrium which oozes blood by reason of its congestion. But while oestrogens are invaluable at the natural menopause they are disappointing when given after radium, x rays, or double oophorectomy. Implantation of oestrogen pellets is similarly useless, though this method has striking success for a year or so when used for the natural menopause. Implantation of oestrone is, however, a risky procedure as it may cause repeated irregular haemorrhages, and it may be necessary to remove the pellet.

Lastly we come to repeated abortion. During early pregnancy, excretion of pregnanediol—the final inert product of progesterone—increases greatly, up to 50 or 60 mg. daily. Where the excretion is markedly low it is stated that abortion is certain. It is well known, too, that removal of the corpus luteum before the 20th week will be immediately followed by abortion. It would therefore appear that for those patients who abort by reason of defective secretion by the corpus luteum progesterone given from the earliest weeks until the 20th week would provide an effective substitution therapy. The estimation of pregnanediol in the urine is difficult and expensive, and thus cannot be used as a test in many cases of early pregnancy of women who have had repeated abortions. Injection of progesterone has been disappointing, perhaps because it produces peak influences followed by "negative phases," but by implantation of a 100-mg. pellet of progesterone it is possible to preserve an even absorption of the hormone. Unfortunately progesterone is not well tolerated by the tissues, and it is always extruded from a fat embedding. It is possible, however, to increase the chance of its retention by embedding the crushed pellet beneath the rectus muscle sheath. The whole pellet may be extruded even from below the rectus sheath, but in only one case have the fragments of the crushed pellet been rejected. I have done too few cases to generalize, but I have evidence that implantation in suitable cases is at least associated with continuation of an undisturbed pregnancy.

Conclusion

I began the address by emphasizing the difficulties and disappointments of endocrine therapy, and continued to show that few conditions can with certainty be cured. The obvious lesson is that we have plunged too quickly and with too high hopes from the endocrinology of animals to its application in clinical medicine. There are many difficulties in the way of clinical research, but it is badly needed. One of the chief obstacles is the complexity of biochemical assay whereby blood and urine levels of the endocrine secretions and their by-products can be measured accurately. A further field is the quantitative effect of emotional states on pituitary secretions and, as I have said, the role of the receptors of the hormones. The synthesis of stilboestrol is an indication of what great progress would follow the synthesis of other hormones. Finally, except in the case of the "trace element" iodine and the thyroid, the relation of nutrition and other "trace elements"—the ultimate source of all our secretions—to endocrine activity has yet been scarcely touched.

VOLVULUS OF THE CAECUM

BY

RALPH H. GARDINER, D.M., M.Ch., F.R.C.S.

Surgeon, Royal Buckinghamshire Hospital, Aylesbury

While volvulus of the sigmoid colon is a well-known condition, volvulus of the caecum is still classed as one of unusual occurrence, unknown to many members of our profession. Isolated cases are considered worthy of report as rarities, and in standard textbooks of surgery the condition is dismissed in a few lines or else entirely ignored. It is not nearly so uncommon as has hitherto been supposed. I have been able to collect reports of 15 cases in the past five years and have had three personal cases in the past two and a half years, and it is by no means a unique occurrence in the experience of other surgeons, many cases not having been reported. It should receive wider recognition, as it is a condition associated with a high mortality rate if treatment is withheld for long, and is apt to remain undiagnosed altogether until the abdomen is opened—frequently too late. Partial torsion often occurs in recurrent attacks over a period of years, sometimes culminating in an acute complete torsion, and may be the cause of obscure abdominal pain and discomfort, simulating in some cases subacute appendicitis. Furthermore, it can seriously complicate pregnancy and the puerperium, and is therefore of importance to obstetricians. A review of the condition dealing with its diagnosis and treatment will, I feel, be of value.

Mortality Rate and Incidence

Some idea of the incidence of the condition may be gained from a review by Wolfer *et al.* (1942), who found that 194 cases had been reported since 1913, with 110 previously, in the world's literature, making a total of 304. Mortality rates given are very high—50 to 60% in cases which had been operated on, rising to 100% in those which had not. A wider recognition of the condition, with prompt diagnosis and treatment, should certainly bring this high mortality rate down to a much lower figure.

Anatomical Factors in Causation

Normally, after the process of herniation of the midgut loop into the umbilical cord has taken place, with its subsequent rotation, it returns to the abdominal cavity, and the process of descent and fixation of the caecum occurs. This is called the third stage of rotation. The caecum lies beneath the liver on its return to the abdominal cavity and then descends to the right iliac fossa, finally becoming fixed to the posterior abdominal wall, its mesentery disappearing. If the fixation, with disappearance of the mesentery, fails to take place, the caecum and ascending colon are left with a variable degree of mobility depending on the length of this mesentery, and it may even be continuous with that of the terminal ileum, making a common ileocaeco-colic mesentery. Variable amounts of ascending colon may be included up to the hepatic flexure and extending to the transverse mesocolon. This will render the caecum and a variable portion of the right half of the colon liable to torsion. The terminal ileum may also be involved. Points of fixation at the base of this mesentery frequently act as hubs round which torsion occurs. Such fixed points are often found at the level of the hepatic flexure or at the point where the transverse colon crosses the duodenum.

Wolfer *et al.* investigated the frequency of this non-fixation of the caecum and right half of the colon, and concluded that it occurs in at least 15% of individuals; other workers give even higher figures—20 to 25%. Any

of these may be liable to caecal volvulus. Rarer causes are errors of rotation (non-rotation, reversed rotation, non-descent of the caecum), several examples of which have been recorded (Dott, 1923 ; Donald, 1927 ; Holman, 1940 ; Godfrey, 1945). The amount of the bowel involved will depend on the extent of the mesentery. Sir Heneage Ogilvie (personal communication) and Haxton (1944) report cases of volvulus of the caecum which had herniated through the foramen of Winslow, indicating the extraordinary amount of mobility which can be present. The direction of the twist appears to be more common in a clockwise direction, although counter-clockwise is by no means unusual.

Aetiology

Fifty per cent. of cases are said to occur between the ages of 20 and 40, but it is common in older people, many cases being found after the age of 60. Males seem to be more prone, in the proportion of three to one (Pratt and Fallis, 1927), which is a surprising preponderance, as women more commonly seem to possess the prerequisite of the persistent mesentery. That it occurs more often in the male sex points to exertion or heavy occupations as factors in causation. Men tend to lead more strenuous lives, and many are engaged in heavy work. Other exciting causes are obscure. Trauma certainly plays a part: violent bodily exercises involving twisting of the trunk may initiate the condition. Sudden or gradual change in the position of the viscera as occurs in pregnancy or the puerperium is undoubtedly important. Other causes given are: (1) mesocolic inflammation ; (2) dietetic errors ; (3) gaseous distension ; (4) violent purgation.

Onset and Symptoms

The onset in some cases is sudden, ushered in by violent abdominal pain, vomiting, and constipation, followed rapidly by abdominal distension, showing all the signs of acute obstruction from the outset ; death may be rapid, and has been known to occur within five hours of onset (Valentine and Kinnear, 1937). In others, however, it is more insidious and prolonged, and it is in these cases that delay in diagnosis may be extremely dangerous, as unless the condition is known it can be easily missed. This slow type of onset is well illustrated in my own cases and in others reported, especially those occurring during the puerperium. I would therefore divide cases, according to their rate of onset and manifestation of symptoms, into three types.

(*a*) *Acute* cases coming on within a few hours and showing all the signs of an acute abdominal catastrophe with the signs and symptoms of obstruction. These are either rapidly fatal or are operated on in good time.

(*b*) Cases *subacute* in onset—giving a history of several hours up to, more often, 3 to 4 days of variable abdominal discomfort and distension with pain and tenderness. The pain may be localized to the right iliac fossa, the condition simulating an appendicitis, or it may be more central, and is quite often epigastric. Temperature and pulse often remain normal throughout. The pain may begin acutely, only to pass off or to become dull and spasmodic. In these cases the past history is of importance, as the patient will nearly always recall similar attacks of a milder nature which have passed off without incident, indicative of a volvulus that has righted itself. Any or all of the following signs may be found on examination of the abdomen:

Tenderness.—This is usually present and is localized over the distended gut, an area of peritonitis developing over and around it. This area is often well demarcated, and occurs according to the position in which the gut is lying, which may be in the right iliac fossa, centrally around the umbilicus, below the right lobe of the liver, or epigastric. In pregnancy, as the gut is pushed up by the expanding uterus, the position is always high in the abdomen. The gut tends to move towards the midline ultimately, so the tenderness becomes more central.

Distension is generally gross, with a tympanitic note indicative of a large accumulation of gas, but may be slow in manifesting itself. Rectal or pelvic examination may not reveal much ; the rectum may or may not be empty, depending on whether the bowels have moved or not. Signs of obstruction will ultimately be present. A plain skiagram of the abdomen is of inestimable value, and is diagnostic in most cases, as pointed out by Chesterman (1945) (see Figs. 1 and 2). The greatly dilated caecum casts a clear shadow, but it may be mistaken for the grossly dilated stomach of chronic pyloric obstruction. The case history should exclude this error, which may arise in cases of slow onset, but a small quantity of barium by mouth will indicate the position of the stomach higher up. A barium enema is rarely necessary for diagnosis.

(*c*) The *chronic* type of case is that in which transient partial volvulus occurs which sooner or later untwists itself. These cases are associated with pain in the right iliac fossa, tenderness, and varying degrees of gaseous distension. One of my cases gave a history of frequent attacks of this nature over a very long period. His abdomen would blow out with wind, gradually subsiding with the passage of a large quantity of flatus. Histories of such attacks are of great importance in diagnosis, as they are often given by patients suffering from complete acute torsion. Special mention must be made of the occurrence of the condition as an acute complication of pregnancy or the puerperium. Norris (1941) reported a case at the fifth month of pregnancy diagnosed four to five days after the onset, and my first case occurred at the fifth month of pregnancy. In Norris's case there seemed to have been a previous chronic attack, and it was first diagnosed as a pyelitis, but a barium enema subsequently showed obstruction at the splenic flexure. Sheldon (1944) and Rose (1941) have reported cases with onset early in the puerperium. Sheldon's case occurred apparently 12 hours after delivery, but was not operated on until the fourth post-partum day. Rose reported a case in a primipara of 38, starting 17 hours after delivery, with a fatal ending, as no diagnosis was made until a laparotomy was done some days after. Rose pointed out the importance of bearing in mind the possible chance of a volvulus being the cause of distension early in the puerperium and he states that the question of exploration of the abdomen should be seriously considered if a post-partum abdominal distension refuses to respond to treatment in 24 hours. He is of the opinion that a volvulus of the caecum or of other parts of the intestine (Spence, 1937) should be listed as one of the causes of post-partum distension, the others being retroperitoneal haemorrhage due to rupture of the uterine artery, puerperal peritonitis, and paralytic ileus.

Treatment

This, of course, is early laparotomy, dealing with the gut according to the state in which it is found when the abdomen is opened. Adequate pre-operative treatment so far as time will allow is of great importance, and blood transfusion should be given, as the volvulus is a type of long loop obstruction with stagnation of a large volume of blood in the distended bowel wall and fluid is lost into the abdominal cavity. Gastric suction and lavage are of value before and after operation. The procedure to be adopted will depend on the condition of the gut. *If viable:* (*a*) derotation with or without fixation of the gut ; (*b*) derotation with caecostomy to decompress and drain the bowel. *If gangrenous:* (*a*) exteriorization and removal with the cautery, with subsequent closure of the artificial anus ; (*b*) resection (right hemicolectomy) and anastomosis of the ileum to the transverse colon.

If early, derotation with or without fixation of the caecum to prevent recurrence, provided it is certain that the bowel is viable, is the best treatment. Fixation can be achieved by Waugh's (1920) method or by less elaborate means, such as removal of the appendix and then fixing the stump to the anterior abdominal wall with a purse-string suture (Lyall, 1946). Caecostomy may also be performed, and is advised by some workers, to drain the distended loop of gut; if done, it should assure fixation by adhesion formation. Very careful handling of the gut is essential owing to its friable and distended state. Later on, if frank gangrene has set in or if the viability of the gut is at all in question, then two methods are available—exteriorization or resection. Exteriorization, with removal by the cautery and subsequent closure of the stoma at a later date, is held by many to be a fatal form of treatment to adopt, associated with a high mortality, but Miller and Clagett (1940) reported two successful cases using this method. Chesterman states that volvulus of the caecum is the only type of obstructive colonic gangrene for which treatment by resection is successful; he recorded one success treated by resection. MacCarthy (1945) reports two cases: one was successful; the other patient died of pneumonia three days after operation. Two of my cases, both of which were in an advanced state of gangrene, were treated by rapid resection and right hemicolectomy with end-to-side anastomosis of the ileum to the caecum; both recovered. The presence of the long mesentery and freely mobile gut makes this, to my mind, an easy procedure. No mobilization of the gut is necessary, and only two to three ligatures on the mesentery are required. If rapidly and skilfully performed, resection is not associated with so high a mortality as has been stated. There remains the chronic case: if the diagnosis is certain and recurring partial volvulus is definitely proved to be the cause of chronic abdominal discomfort, should laparotomy and anchorage of the mobile caecum be performed? There are also the large number of cases of mobile caecum from other causes discovered at laparotomy: should fixation be performed as a prophylaxis in these? The choice will depend on the individual surgeon; one is hesitant to advocate a return to the old days of pexis. If the caecum is to be fixed, Waugh's method could be used, but less elaborate procedures would seem to be adequate.

Case I

A married woman aged 37 (R.B.H. 43/795) was admitted to the Royal Buckinghamshire Hospital on April 26, 1943, at 10 p.m., with a history of the onset of sudden severe pain in the epigastrium beginning three hours before admission. At 8 p.m. the pain became very severe, and she vomited once. The bowels had been opened normally the same morning. She was six months pregnant, having had three normal pregnancies. One month previously she had had a similar attack of pain in the right groin spreading across the lower abdomen. It was sudden in onset, lasting half an hour, with severe vomiting. The pain suddenly ceased, and the attack passed off completely.

On admission she was pale, thin, and tired-looking; temperature 97° F. (36.1° C.), pulse 70; tongue clean. The abdomen showed rigidity and tenderness all down the right side. The uterus was enlarged to the extent of a 5½-months pregnancy. Micturition was normal and the urine clear. Per vaginam, nothing abnormal was seen except a gravid uterus. No definite diagnosis was made; it was decided to watch her overnight, and her pulse was taken half-hourly. Throughout the night it remained steady at 70 to 75 a minute, but in the early morning the pain, which had been dull during the night, suddenly became very severe. At 6 a.m. the temperature was 98° F. (36.7° C.) and pulse 75; it was decided to do a laparotomy. The abdomen was opened by a right paramedian incision and offensive free fluid poured out. The caecum, ascending colon, right half of the transverse colon, and terminal ileum were found lying on the right side beneath the liver. They were in an advanced state of gangrene, grey-green in colour, and very offensive. A rapid right hemicolectomy was performed and the ileum joined to the transverse colon by an end-to-side anastomosis. Sulphapyridine, 15 g. in warm saline, was placed in the abdominal cavity and the abdomen drained through a right flank incision. The patient made an excellent recovery and was discharged on the 15th post-operative day.

She was readmitted to hospital at midnight on June 23 with a further attack of abdominal pain and vomiting, and a diagnosis was made of small-gut obstruction, possibly due to adhesions. Stomach suction was carried out, and she was operated on a few hours after admission by the late Mr. C. A. Joll. No obstruction was found, and but for a few adhesions around the small gut the abdomen was clear. A classical Caesarean section was performed at the same time, and a female child, birth weight 5 lb. 11 oz. (2.58 kg.), was delivered. Mother and child were discharged fit and well on July 11.

Case II

A roadmender aged 59 (R.B.H. 44/678) was admitted to the Royal Buckinghamshire Hospital on April 8, 1944, complaining of abdominal pain. This had begun a few hours previously and was very severe, causing the patient to sweat and feel faint. He had vomited several times, and the bowels, which were usually very regular, had not been opened. He was also suffering from acute retention of urine, and his doctor had found it necessary to pass a catheter for relief. He had been investigated for gastric ulcer some seven years previously.

On examination he was healthy-looking, with a good colour; pulse 100, temperature 98° F (36.7° C.), and he showed no evidence of shock or collapse. Heart and lungs were normal. His abdomen was slightly distended, and there was tenderness in the right iliac fossa with some rigidity; a diagnosis was made of acute appendicitis or, possibly, a perforated peptic ulcer. He was operated on within an hour or two of admission, the abdomen being opened through a right paramedian incision. The peritoneal cavity contained blood-stained fluid and the right iliac fossa appeared empty. On examining the pelvis, distended and tense bowel could be felt firmly wedged. It was thought to be a volvulus of the sigmoid colon, but on delivery was found to be an enormously distended caecum with a portion of ascending colon and terminal ileum. At one point the caecum was gangrenous and also perforated. A rapid resection was therefore done of the whole of the volvulus, including the terminal ileum, caecum, and ascending colon. An end-to-end anastomosis was performed between the terminal ileum and the distal end of the ascending colon. Sulphapyridine, 15 g. in saline, was placed in the abdominal cavity and also in the wound, and the abdomen was drained. He made an excellent and uninterrupted recovery, and was discharged fully recovered on April 20, 12 days after admission. He returned to work shortly afterwards, and has since been carrying on without trouble.

Case III

A man aged 60, a secretary, was admitted to the Tindal House Emergency Hospital, Aylesbury, on Jan. 12, 1946, as a medical emergency. The history was that three days before admission the patient had had a sudden attack of coughing and breathlessness while walking, and was just able to reach home, where he collapsed. A diagnosis of coronary thrombosis was made. Examination had revealed signs of myocardial failure but nothing else definite beyond diminished breath sounds at the base of the left lung. There was also marked swelling of the lower abdomen and tenderness in the left iliac fossa. His bowels had been constipated since admission, and there had been no result from four enemata. Examination showed an empty rectum. On account of marked distension I was asked to see him in consultation on Jan. 14 to exclude any possible lesion in the abdomen, although the diagnosis of coronary thrombosis was fairly certain. When I examined him he was sitting up in bed having his tea, and made no complaint at all of any abdominal discomfort. Examination of the abdomen revealed marked distension with gas and a tender mass situated in the midline of the lower abdomen, which was tympanitic. He stated that he had often had similar attacks, extending back over a number of years, which passed off with the passage of a large amount of gas, and he was suffering no discomfort during

this attack. I diagnosed a possible volvulus of the caecum, and this was confirmed by straight skiagrams (see Figs. 1 and 2). He was very loath to submit to a laparotomy, and as there was no doubt that he had a coronary thrombosis and left basal pneumonia, the question of operation was very carefully considered. As there was no sign of the swelling going down the next day, and in view of the *x*-ray findings, I decided to operate in the afternoon. Before the operation started he collapsed under the anaesthetic and the heart stopped beating. The abdomen was opened through a midline epigastric incision and the heart rapidly massaged. The beat returned in about three minutes, and a rapid examination of the caecum before sewing up revealed a complete volvulus involving the terminal ileum and ascending colon. It was blue-black in colour, with suspicious areas of ulceration on the surface. It was twisted in a counter-clockwise direction; this was quickly undone and the gut was replaced in the abdomen, which was rapidly closed. He was returned to the ward, but never regained consciousness; he died five days later, on Jan. 19.

FIG. 1.—Case III. Straight skiagram of abdomen (upright). Note large fluid level across middle of abdomen just above the iliac crests.

FIG. 2.—Case III. Straight skiagram of abdomen (supine). Note shadow of enormously dilated caecum stretching across abdomen from right iliac fossa to level of first lumbar vertebra on left side.

Necropsy showed a thrombosis of the descending branch of the left coronary artery with a large infarct of the anterior wall of the left ventricle. There was venous congestion in the liver and spleen and a patchy bronchial pneumonia at the left base. The caecum and ascending colon were abnormally mobile, with a mesentery which extended halfway up the ascending colon. There was slight kinking of the bowel; the caecum was distended and had fallen forward, and was half rotated to the left. The bowel, however, was quite viable, and there was no evidence of gangrene.

Summary and Conclusions

Volvulus of the caecum is a far more common condition than has hitherto been supposed.

One or several attacks of partial volvulus often precede an acute and final attack.

Pain and tenderness in the right iliac fossa shifting to the centre of the abdomen, with immediate or subsequent gaseous distension and obstruction, are the usual findings.

Straight skiagrams of the abdomen give appearances which are diagnostic of the condition.

It may seriously complicate pregnancy or the puerperium.

Cases should be recognized early, and the treatment is by laparotomy, dealing with the condition of the gut found at operation; if viable, by derotation and fixation; if gangrenous, by right hemicolectomy.

Three illustrative cases are recorded.

I wish to thank Sir Heneage Ogilvie, K.B.E., for his kindly advice and comments, and Dr. T. V. Critchlow for the excellent *x*-ray photographs.

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Milk production continues to rise in Britain. According to figures recently given by Mr. J. L. Davies, of the Milk Marketing Board, the estimated output in December was 98,000,000 gallons, which is only just short of the target set for December, 1947—100,000,000 gallons. Consumption during 1946 was 53% higher than before the war, and the abolition of milk rationing in England and Wales would necessitate an annual monthly production of 110,000,000 gallons. The ration may be larger next winter—three pints a week is hoped for—but there is no prospect of its being abolished then.

THE HEART IN RHEUMATOID ARTHRITIS

BY

ALFRED S. ROGEN, M.D., F.R.F.P.S.G.

(From the Department of Materia Medica and Therapeutics, Glasgow University, and the University Medical Clinic, Stobhill Hospital)

Rheumatic fever and rheumatoid arthritis are generally regarded as distinct diseases which have much in common, but the possibility of their having a common aetiology has often been discussed. As cardiac lesions are characteristic of rheumatic fever, many workers have sought similar lesions in rheumatoid arthritis. Recently tissues obtained at necropsy from patients who had suffered from rheumatoid arthritis have been studied, and a high incidence of heart lesions has been reported showing histological characteristics similar to those of rheumatic fever.

Only the more recent published work will be reviewed here. Master and Jaffe (1932) reported on the electrocardiographic findings in 17 patients with rheumatoid arthritis. The absence of abnormalities—as contrasted with a 100% incidence of electrocardiographic changes in rheumatic fever—prompted them to suggest that when in doubt as to the differential diagnosis between these two conditions a normal electrocardiogram was in favour of a diagnosis of rheumatoid arthritis; but the number of patients was so small that this suggestion must remain a tentative one. Dawson and Tyson (1936) presented evidence to show that the two diseases are intimately related. Their similarity was stressed under the headings of familial relationship, geographical distribution, initiating factors, seasonal incidence, age incidence and clinical manifestations of the two diseases in different age periods, pathological similarities, and immunological findings. In a series of 100 patients they found 7 with unequivocal signs of rheumatic heart disease; the onset of disease in all these patients occurred most commonly in the second and third decades of life. Collins (1937) and Bennett, Zeller, and Bauer (1940) reported that the nodules of rheumatoid arthritis and rheumatic fever were not similar on microscopical examination. On the other hand, Baggenstoss and Rosenberg (1941) quote various workers who reported the histological similarity of the subcutaneous nodules of the two diseases. Baggenstoss and Rosenberg (1944) described two cases of rheumatoid arthritis with cardiac lesions very similar histologically to the subcutaneous nodules present in that disease. They state further that, as a rule, the cardiac lesions of rheumatoid arthritis are indistinguishable from those produced by rheumatic fever. They had previously (1941) found the rheumatic type of heart disease in 14 of 25 cases of rheumatoid arthritis which came to necropsy; in only 7 of these 14 had there been any clinical evidence of heart disease. In 6 the mitral valve was involved, and in 2 of these there was advanced stenosis. Bayles (1943) in 23 necropsies on subjects with rheumatoid arthritis found 6 cardiac lesions suggestive of rheumatic fever, 1 possibly active, and 5 inactive. Young and Schwedel (1944) in a post-mortem study of 38 cases of chronic rheumatoid arthritis found cardiac lesions in 33, in 25 of which (65.7%) the lesions were considered to be indistinguishable from those of acute rheumatism, and of a non-specific infective nature in the remaining 8. An active rheumatic process was present in 6. There was a history of rheumatic fever in 3 only, and of probable rheumatic fever in 2. From this extremely high incidence of the rheumatic type of heart disease in rheumatoid arthritis they concluded that there is an extremely close aetiological relationship between the two diseases.

An editorial comment (*British Medical Journal*, 1945, **1**, 636) on Young and Schwedel's paper notes that the incidence of disease on the several valves was similar to that of acute rheumatism but that the incidence of mitral stenosis was not given. It was further pointed out that microscopical examination of the myocardium showed Aschoff bodies in one case only, but that this was not surprising as the majority of the patients were old at death. Again, scarring in the myocardium occurring in only two instances was considered to be an unduly low incidence for acute rheumatism. The annotator also made the important observation that "in rather a large proportion of cases clinical examination had given negative results." This apparent discrepancy between the clinical assessment and the post-mortem findings calls for careful consideration. It suggests that valvular disease may occur in rheumatic fever without producing clinical signs, in which case one could never be sure that there was no valve damage. In other words, the lesions might be demonstrable histologically and yet fall short of interfering with the valve mechanisms. Alternatively, there might be some other fundamental difference between the valvular lesions of the two diseases, so that those of rheumatic fever resulted in the production of murmurs while those of rheumatoid arthritis did not—a state of affairs which is highly improbable. Fraser (1945) noted a 14% incidence of valvular disease of the heart on clinical examination in 110 patients suffering from rheumatoid arthritis. This was merely an incidental finding, however, and the valvular lesions are not classified. Paul D. White (1944) states that, in rheumatoid arthritis, pericarditis and endocarditis and myocarditis may infrequently appear as complications not to be ascribed, at least in all cases, to a coincident rheumatic fever.

The Present Investigation

The object of this paper is to record the results of a detailed examination of the cardiovascular system in 33 consecutive cases of rheumatoid arthritis admitted to municipal hospitals in Glasgow. The severity of the illness in these patients is given in accordance with the classification suggested by Sclater (1943). Of the 33 patients 4 fell into Group I, 10 into Group II, 11 into Group III, and 8 into Group IV. Besides the usual clinical examination, every patient was submitted to electrocardiographic investigation. In addition, radiological examinations of the heart were made in the earlier patients of the series, but this was soon found to be impracticable because of technical difficulties associated with the gross deformities of the joints resulting in inability to get many of the patients into the suitable position. None gave a previous history of rheumatic fever.

Eleven of the patients were males and 22 were females. The age distribution is shown in Tables I and II, which also give the duration of the illness in each case.

TABLE I.—*Age Incidence: Males*

	Age Groups						
	40–45	46–50	51–55	56–60	61–65	66–70	71–75
No. in each group	3	2	2	0	2	1	1
Duration of illness (in years) of each patient	1, 4, 2	2½, 3	5, 1		6/52, 14	2	1

TABLE II.—*Age Incidence: Females*

	Age Groups										
	25–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70	71–75	76–80
No. in each group	1	3	1	0	1	4	2	1	4	3	2
Duration of illness (in years) of each patient	1/52	8, 7, 7	5		20	18, 35, 6, 2	8, 2	10	3, 5, 4, 9	31, 3/12, 4	4, 10

The duration of disease is that given by the patient. No doubt there is considerable inaccuracy here. For example, in two patients who gave histories of only a few weeks' duration bony changes were apparent on *x*-ray examination. Accepting the figures as given by the patients, however, the average duration of the illness for the males was 3.2 years and the females 9.0 years—long enough for the development of any lesions.

That males were, on the average, admitted to hospital for treatment so much earlier than females is probably accounted for by the fact that in the breadwinner impairment of manual dexterity or locomotion is likely to be of more serious consequence than similar disabilities in the housewife.

The cardiac rhythm was regular in all cases. The first mitral sound was split in 2 cases, and the intensity of this sound was diminished in 10 others, compatible with their age and varying degrees of emphysema; otherwise no abnormality was noted. However, it would be only in the incidence and character of murmurs indicative of valvular disease that a parallel between this disease and rheumatic fever could be drawn. A particularly careful search was made for evidence of early mitral stenosis, but none was found. In 8 cases a faint systolic murmur was heard at the mitral area; in all of these it was sharply localized. None of them was associated with a loud sharp first sound or with an accentuated second pulmonary sound. They were considered to be functional in origin. In one case only was there a loud mitral systolic murmur; it did not replace the first sound but was conducted well into the axilla. This occurred in a woman of 68 who had had rheumatoid arthritis for nine years, and the signs were thought to indicate organic mitral valve disease.

Electrocardiographic Findings

There are, of course, no electrocardiographic abnormalities pathognomonic of rheumatic fever; the study of electrocardiograms in rheumatoid arthritis is therefore of limited value in studying the aetiological relationship between the two diseases. According to Katz (1941) chronic rheumatic heart disease may result in tracings showing preponderance of one or other ventricle resulting from valve deformities, or the appearance of large, broad, or notched P waves associated with auricular hypertrophy. Specific contour changes and arrhythmias may develop, such as frequent auricular premature beats, which are said to be particularly significant when they arise from multiple foci. Electrocardiograms were taken from 29 patients. Left axis shift was present in 17; there was a considerable incidence of slurring of the QRS complexes, and the T wave was inverted in one case in Lead I, in another in Lead II, and in a third in Lead CF_4. These abnormalities were consistent with the senile degeneration of the coronary arteries of old people, who formed the majority of the patients in this series. None of the records showed abnormal ventricular preponderance, the P waves were well formed, and the cardiac rhythm was unaffected. A woman of 71, who gave a history of only three months' illness but who had obvious joint changes on *x*-ray examination, showed very low complexes in all leads when the first electrocardiogram was taken. Serial tracings showed an increasing amplitude of the complexes until five weeks later the voltage was well within normal limits. This suggests that there was transient myocardial damage during the acute phase of the illness, but it does not necessarily denote any common aetiological factor between rheumatoid arthritis and rheumatic fever; such findings might be encountered in many acute illnesses and toxic states.

Only one patient in the present series came to necropsy. She was an elderly woman who died of cerebral thrombosis. The naked-eye appearances and histological findings in the heart revealed no evidence of rheumatic infection.

Discussion

The results of this investigation serve to emphasize once again the extraordinary discrepancies which exist in the opinions of different workers. No doubt this is largely the result of failure to lay down generally acceptable criteria for the clinical diagnosis of cardiac lesions in the early stages of disease. Another difficulty is that of excluding cardiac abnormalities which are purely incidental and usually the accompaniments of senile degenerative changes in the myocardium and coronary arteries. After making liberal allowances for these complicating factors, it would appear that clinical evidence of mitral valve disease was elicited in only one patient in a series of 33 cases of rheumatoid arthritis. The literature cited raises the possibility that the incidence of subclinical valvular disease associated with rheumatoid arthritis in the present group was much higher than this, but in the solitary case examined at necropsy no cardiac abnormalities were detected. A final opinion on the concept of latent or subclinical endocarditis must await further pathological studies, which will need to be sufficiently comprehensive; the difficulties in the way of obtaining these data in a disease which *per se* is rarely fatal need no emphasis.

Summary

Recent literature on the subject of the aetiological relationships between rheumatic fever and rheumatoid arthritis is reviewed.

Among 33 patients suffering from rheumatoid arthritis only one was found to have a cardiac lesion which might have been attributable to the disease. Another patient came to necropsy, and was found to have neither histological nor naked-eye abnormalities of the heart.

A brief reference is made to the limited value of comparisons between the clinical manifestations of these two conditions in the present state of our knowledge of the rheumatic diseases.

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INCIDENCE OF YAWS AND OF VENEREAL DISEASES IN LANGO (UGANDA)

BY

C. J. HACKETT, M.D.

Director, Wellcome Museum of Medical Science, London

During a study of the bone lesions of yaws in Lango the high incidence of that disease became apparent. Since a medical survey was not practical, nor was it necessitated by trypanosomiasis, other measures were sought to ascertain more precisely the frequency of yaws. At the same time the incidence of venereal diseases in Lango and, for comparison, in Ganda was assessed. Medical reports were examined, out-patient attendance records analysed, and a labour force and a sample of a gaol population were studied. These data form the basis of this paper.

The results of a survey for leprosy are contained in the annual report of the District Medical Officer of Lango for 1931. Of 24,249 children under 15 years of age, 963 (3.9%) were suffering from secondary yaws. Of 152 cases of secondary yaws with bone lesions studied by me in 1937–9, 131 (86%) were under 10 years of age. Active secondary yaws in children was observed in practically every Lango community, and chiefs frequently stressed its high incidence. The absence of yaws in infants before the age of walking was also noted.

Survey of Out-patient Attendances, Lira and Masaka

Lira (Lango district), about 3,600 ft. (1,100 m.) above sea level and north of Kampala, is in a part of Uganda described as a "yaws area"—i.e., one in which yaws is common and syphilis rarely occurs. Masaka (Ganda Province), about 4,300 ft. (1,300 m.) above sea level and south-west of Kampala, is in a part regarded as a "syphilis area" and in which yaws is infrequent. This characteristic local distribution of the two diseases applies only to the indigenes. Masaka has been chosen rather than Kampala for comparison with Lira, since it is not so large a centre as Kampala, and data from it are thus more likely to give an accurate picture of the conditions present in a rural community. The figures in Tables I, II, and IV were obtained from the monthly sick returns for Lira and Masaka, which were based mainly upon the diagnoses of trained African medical orderlies. These diagnoses of the conditions concerned may be regarded as fairly accurate. Orderlies with experience in both syphilis and yaws areas were working in both clinics.

TABLE I.—*Average Annual Out-patient Attendances by New Cases at Lira and Masaka for the More Frequent Complaints (excluding Coughs, Colds, and Traumatic Lesions), and for Syphilis and Gonorrhoea*

	Lira (1928–36)		Masaka (1930–8)	
	Totals	%	Totals	%
Yaws	3,077	20·9	266	1·6
Syphilis	164	1·1	2,818	17·5
Gonorrhoea	85	0·6	410	2·5
"Myalgia"	662	4·5	340	2·1
Ulcers	803	5·5	443	2·8
Malaria	775	5·3	1,966	12·1
Ratio of gonorrhoea to syphilis	0·5 to 1		0·15 to 1	
Total attendances (all causes)	14,707		16,207	

The incidence of yaws at Lira was 13 times that at Masaka, while the incidence of syphilis in Masaka was 16 times that at Lira. At Lira the incidence of yaws was 19 times that of syphilis, and at Masaka syphilis was 11 times more prevalent than yaws. Congenital syphilitic infants were frequent at Masaka. Gonorrhoea, however, was only 4 times more frequent at Masaka than at Lira. The proportion of new cases of gonorrhoea to those of syphilis at Lira was 0.5 to 1, and at Masaka 0.15 to 1. This ratio in England and Wales in 1936 was 2.6 to 1 (18th Annual Report of the Ministry of Health). The figures for gonorrhoea at Masaka may be incomplete, since in Ganda Province this disease is prevalent. It is unfortunate that the incidence of gonorrhoea cannot be used as a check on that of syphilis. At Lira "myalgia" and "ulcers" were diagnosed twice as frequently as at Masaka. Malaria was only about half as frequently diagnosed at the former as at the latter, but at both the real incidence probably approximated to 80–100%.

The Medical Officer at Masaka (Dr. A. G. Mackay) said that most of the yaws cases seen there were in immigrant labourers from the Belgian mandated territory of Ruandi-Urundi, and that the disease was rarely seen in the indigenous Ganda population. At Lira the Medical Officer's annual reports repeatedly state that most cases of syphilis and gonorrhoea occurred in Bantu immigrants (Ganda and Nyoro) and in Kumam people, and very infrequently in the indigenous Lango. Personal observations confirmed this. At Lira, though the total attendance by females was only half of that by males, the attendance for yaws by females was nearly equal to that by males. At Masaka the total attendance by females was 60% of that by males, and the attendance for syphilis by females was 80% of that by males. The attendances for both diseases included cases at all ages and all stages. The higher attendance by females for yaws at Lira may in part result from mothers accompanying their yaws-infected children to the clinic and presenting themselves for treatment for late yaws lesions. The higher female attendance for syphilis at Masaka may partly arise from women being more alert regarding early secondary skin lesions.

TABLE II.—*Sex Distributions of Average Annual Out-patient Attendances for All Causes, and for Yaws and for Syphilis, at Lira and Masaka*

		Lira (1928–36)			Masaka (1930–8)		
		Totals	% of Totals	% of Totals for Sex	Totals	% of Totals	% of Totals for Sex
All cases	Total	14,707			16,207		
	Males	9,755	66·0		10,008	61·0	
	Females	4,952	34·0		6,199	39·0	
Yaws	Total	3,077			266		
	Males	1,599	52·0	16·3	187	70·0	1·87
	Females	1,478	48·0	29·8	79	30·0	1·27
Syphilis	Total	164			2,818		
	Males	95	58·0	0·98	1,567	55·0	15·7
	Females	69	42·0	1·39	1,251	45·0	20·2

The figures in Table III were obtained by the then Director of Medical Services of Uganda (Dr. W. H. Kauntze). It will be seen that at Lira the yaws cases were a random sample of all other attendances. At Masaka fewer children attended the out-patient department than at Lira; the smaller number of children among the syphilis cases compared with those among all other cases is statistically significant (6.6 ± 3.12). This stresses the higher ages of the syphilis patients.

TABLE III.—*Sex and Age Distribution of Out-patient Attendances by New Cases for Yaws at Lira and Syphilis at Masaka (April, 1940)*

	Lira			Masaka		
	Under 10 yrs.	Over 10 yrs.	Total	Under 10 yrs.	Over 10 yrs.	Total
	All Cases less Yaws			All Cases less Syphilis		
Males	141	624	765	121	829	950
Females	123	284	407	103	340	443
Total	264 (22·5%)	908	1,172	224 (16·1%)	1,169	1,393
	Yaws			Syphilis		
Males	34	103	137	6	79	85
Females	33	112	145	8	55	63
Total	67 (23·8%)	215	282	14 (9·5%)	134	148

TABLE IV.—*Average Monthly Out-patient Attendances by New Cases less Yaws and of Yaws at Lira (1928–36)*

Month	Yaws	Total Attendances less Yaws	Month	Yaws	Total Attendances less Yaws
January	189	936	July	247	1,017
February	243	874	August	210	944
March	317	953	September	232	1,000
April	327	951	October	293	1,071
May	279	894	November	259	1,081
June	296	960	December	185	949

TABLE V.—*Average Monthly Climatic Data for Lira (Ngetta), 1928–36. (British East African Meteorological Service)*

Month	Air Temperature (° F.)			Relative Humidity (%)		Rainfall (inches)
	Maximum	Minimum	Max. + Min. / 2	08·30	14·30	
January	91·8	60·4	76·1	61	32	1·25
February	92·4	63·6	78·0	76	40	1·40
March	90·4	64·6	77·5	77	41	3·29
April	86·7	64·1	75·4	83	50	6·72
May	83·5	63·8	73·6	84	59	8·55
June	82·8	62·4	72·6	84	57	5·32
July	81·7	61·7	71·7	86	57	4·18
August	83·2	61·5	72 3	84	58	8·49
September	85·2	61·8	73 5	82	53	6·30
October	86·5	61·8	74 1	79	49	5·82
November	86·5	61·3	74·9	76	46	2·69
December	87·7	60·3	74·0	72	42	2·55
Annual values	86·7	62·3	74·5	79	49	56·56
Annual values for Masaka, 1928–36	79·6	61·1	70·3	84	62	49·41

In Table IV the variations in the average monthly attendances for yaws are statistically significant. The figures for males and females closely resembled those for the sexes combined. The variations in the average monthly attendances for syphilis at Masaka were not statistically significant. It will be seen that the peaks of maximal incidence of yaws were in April and October, and that there were ascending peaks for the total attendances less yaws in March–April, July, and October–November.

From Table V it will be seen that there is some slight relationship of yaws incidence with an average monthly rainfall over 6 in. (15 cm.) and an average relative humidity at 14.30 hours over 50%. An analysis of the community activities of the Lango, however, suggests that the attendance peaks under consideration coincide with the slackest periods of local husbandry—between the planting and harvesting of early and late crops.

Out-patient Attendances, Kampala

From the out-patient record cards at Mulago Hospital, Kampala, for attendances during 1933 and 1934, notes were made in 190 cases diagnosed as secondary syphilis. This is

only a small proportion of the total attendance for that disease, but these records, mostly of Ganda patients, were chosen for their relative completeness. In 173 of these 190 cases (all young adult males) the serum Kahn was positive or spirochaetes were found. In 7 the serum Kahn was negative. Penile sores were present in 60 cases; 41 admitted and 6 denied having had any penile lesions. Among these 190 cases the following frequency of lesions was recorded: condylomata, 91; "secondary rashes," 21; macules, 20; papules, 14; maculo-papules, 9; circinate lesions on scrotum, 8; buccal mucous membrane lesions, 8; papulo-squamous, 3; squamous, 2; circinate, 2. The condylomata were described as scrotal, perineal, and anal. No mention was made of any framboesiform lesions. At Lira the atypical secondary yaws lesions, and genital lesions, in the absence of typical lesions were infrequent. Loewenthal (1939) reported syphilitic aortitis and aneurysm, meningo-vascular lesions, choroiditis, and gummatous iritis in patients at Mulago, but stated that visceral gummata were rare. Such lesions were not seen among the Lango.

Serological Surveys

Sera collected in January, 1939, from 100 consecutive male Lango prisoners, aged 18 to 35 years, in the Erute (Lira) Gaol gave the following Kahn reactions: ++++, 46; +++, 21; ++, 14; +, 2; ±, 7; and −, 10. If reactions of +, ±, and − are regarded as negative, then 81 were positive. The ages of these subjects were: 18–20 years, 32; 21–25, 36; 26–30, 23; 31–35, 9. Other findings in this group and in 130 station labourers are given in Table VI.

TABLE VI.—*Clinical Findings in Two Groups of Adult Lango Males at Lira*

	100 Prisoners	130 Station Labourers
	%	%
History of having had yaws ..	94	90
Scars of previous secondary yaws	78	79
Enlarged epitrochlear glands ..	72	69
Bone changes	68	62
Palmar changes	51	60
Plantar changes	61	73
Bone pain	49	41

One case each of dorsal ganglion of the wrist, Dupuytren-like contractures of the fingers, and aortic systolic murmur was seen among prisoners under 30 years of age; the sera from these were Kahn ++++. Among the labourers were 4 cases with ganglion and 12 with Dupuytren-like contractures. Bone changes consisted mainly of bowing, thickening, or irregularity of tibiae. Palmar and plantar changes comprised thickening, localized or generalized erosion, fissuring, pitting, and laminar desquamation.

Among the prisoners no statistical association was found between any of the items in Table VI and the reaction of the serum Kahn. The six prisoners who denied having had yaws were under 25 years of age; the serum from two was Kahn ++++, from another two it was Kahn +++, and from the remaining two Kahn −. The last two subjects were 20 years of age, both complained of bone pain, one had enlarged epitrochlear glands, and the other had indefinite minor plantar changes. Of 120 male Lango prisoners in the Erute (Lira) Gaol, in October, 1938, 8 denied having had yaws. Their ages ranged from 17 to 33. Sera from four were Wassermann ++++ and Kahn ++++, those from the remaining four were Wassermann −; from one of these it was Kahn +, from another Kahn ±, and from the remaining two Kahn −.

Summary and Conclusions

In 1931 a survey showed that 3.9% of 24,249 children under 15 years of age were suffering from secondary yaws.

At Lira, in a "yaws area," yaws was a frequently diagnosed disease (20% of 14,707) and was 19 times as frequent as syphilis. At Masaka, in a "syphilis area," syphilis was a frequently diagnosed disease (17% of 16,207) and was 11 times as frequent as yaws. At each locality coughs, colds, and traumatic lesions were the most frequent diagnoses. Malaria was probably of nearly universal incidence in both localities. At Lira females were proportionately more numerous among the yaws cases than among the total attendances. A quarter of the yaws cases were under 10 years of age. There was a smaller proportionate excess of females among the syphilis cases at Masaka as compared with the total attendances. Syphilis cases at Masaka were older compared with the age distribution of the other attendances.

In 1939, 81 of 100 consecutive male Lango prisoners, aged 18–35, had positive Kahn reactions. Of the six of this series who denied having had yaws, only two had completely negative Kahn and Wassermann reactions in their sera.

It may be concluded that the incidence of yaws in Lango was high, and that probably very few adults died without having contracted the disease. On the other hand, in Lango the incidence of venereal disease was very low.

The material for this paper was obtained during 1937–40 while holding a Senior Fellowship in Tropical Medicine of the Medical Research Council. I am indebted for much help received to Dr. W. H. Kauntze, then D.M.S., Uganda, and his medical officers. All serological tests were carried out by the staff of the pathological laboratory at Mulago Hospital. Dr. W. J. Martin, of the Statistical Department of the Medical Research Council, has kindly carried out the statistical analyses.

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EFFECT OF ORGANIC MERCURIAL PREPARATIONS ON DISEASES OF THE SKIN

BY

E. A. J. BYRNE, M.D., M.R.C.P.
Lately Medical Specialist, R.A.M.C.

A preliminary report on organo-mercurial treatment of the dermatomycoses and of infected skin lesions, including "jungle sores," was published in the *Indian Medical Gazette* in August, 1944 (Byrne and Croxon). This present report is an amplification, and is based on the treatment of 500 cases of skin lesions in the Tropics with organo-mercurial compounds. Three preparations were used—phenyl mercuric chloride, acetate, and benzoate; they will be referred to subsequently as P.M.C., P.M.A., and P.M.B.

The toxic action of mercury on bacteria depends on the free concentration of Hg ions in solution (Paul and Prall, 1907), and it has been shown that the Hg cation is the most effective of the heavy metal cations (Woodruff and Bunzel, 1909; Winslow and Hotchkiss, 1922); but though the inorganic salts of mercury have a powerful action *in vitro* their bactericidal effect is greatly diminished *in vivo*, especially in the presence of organic matter. Chick and Martin (1908) consider that this is due to the fact that the Hg cation combines with protein to form an insoluble albuminate, hence the concentration of free ions is greatly diminished. The same workers reported that the addition of 3% of faeces to a solution reduced the activity of mercuric chloride by 90%. The activity of certain organo-mercurials under these conditions is reduced only by 20–25%, for it appears that the formation of an insoluble albuminate does not obtain to any marked degree with drugs of this group. It therefore follows that in the presence of organic protein matter the organo-mercurials possess a far greater bactericidal effect than do the inorganic salts of mercury.

An exceptional toxicity towards all forms of life is exhibited by those compounds of mercury which structurally are the most simple, and this lethal action is markedly selective in highly organized animals: the effect is determined largely by the character of the hydrocarbon radicle—aromatic or aliphatic—associated with the mercury atom, aliphatic compounds being particularly virulent. On the other hand, aromatic derivatives have a relatively low local and systemic toxicity, and, provided the hydrocarbon is an unsubstituted phenyl radicle (C_6H_5), a very high bactericidal potency.

It is important to record in connexion with specific action that the aliphatic organo-mercurials exemplified by mercury dimethyl and diethyl—$(CH_3)_2Hg$ and $(C_2H_5)_2Hg$—and derivatives thereof, such as the chloride (CH_3HgCl) and nitrate (CH_3HgNO_3), have a specific effect on the C.N.S., causing rapid degenerative lesions in cerebral and cerebellar areas. These compounds are most interesting in human toxicology

in view of the long latent period between their application or ingestion and the development of signs and symptoms in the C.N.S. This characteristic has received much attention in industrial medicine, as the pathological symptoms differ from those associated with ordinary mercurialism (Hunter *et al.*, 1940; Hill, 1943).

Preference for P.M.C.

The aromatic aryl compounds (phenyl mercuric chloride, nitrate, borate, acetate, benzoate, and picrate) have been investigated chiefly in the United States, but Biskind (1935) has given a detailed account concerning them in the English literature. Certain of the above-mentioned compounds find extensive application in horticulture and agriculture for the control of fungous disease of plants, and the fungicidal action of P.M.C. was investigated by Shaw and Montgomery (1941; Shaw and Moore, 1944). They showed that this substance is one of the most powerful fungicides known, and acts rapidly and effectively in high dilution, destroying both spores and vegetative forms.

For medical purposes the bactericidal and bacteriostatic action of P.M.C. was first investigated by Weed and Ecker in 1933. These workers found that the concentration necessary to inhibit the growth of *Str. haemolyticus* and *Staph. aureus* was of the nature of one part in several millions. This effect is due to the C_6H_5Hg ion, and though the solubility of P.M.C. is very low this does not detract from its effectiveness. The lethal effect is due to the action of mercury in combining with and blocking essential thiol groups in the cytoplasm of the infecting fungi or bacteria. The gross disturbance of metabolic function so caused leads to the rapid death of the infecting agents.

P.M.A. and P.M.B. have a marked affinity for chlorine; as NaCl is an invariable constituent of tissue fluid it was felt that the change to P.M.C. would be a rapid one, and that the direct application of this ultimate chemical product should be made whenever possible (FitzGibbon, personal communication). This report therefore deals mainly with the action of phenyl mercuric chloride.

As in all bactericides, the reaction velocity of P.M.C. depends on its concentration in the area in which it is to exert its action, but owing to its tendency to produce a vesicant effect on tissue or skin (although strikingly less than other compounds in the series) the concentration used must be carefully limited In practice it has been found that 0.25% P.M.C. or P.M.A. represents the maximum concentration which can be used without producing these effects. Applications of a much lower strength were used in the majority of cases treated. A strength of 0.5% P.M.C. precipitated on a calamine filler was used in the preparation of an adhesive lotion for moist skin lesions; but the physicochemical mechanisms obtaining when the drug is presented in this way are entirely different from those which occur when emulsifying or aqueous vehicles are used. The use of a colloidal solution was considered, but the grave disadvantage of this method is that in using colloidal solutions of a drug the activity of which is an ionic property the protective colloid removes the charge from the active cation, and hence nullifies its effect.

Preparation for Use

In order to deal with the varying types of skin lesions requiring treatment it was decided to present P.M.C. and P.M.A. in three types of base: (1) in "eucerin" and distilled water; (2) in an adhesive lotion of the lotio calaminae type; (3) in simple solution in distilled water. As P.M.A. is soluble in hot distilled water up to a concentration of 2.5% the ointment is made by dissolving the drug in distilled water at a temperature of 85° C. This solution while still warm is slowly added to the "eucerin," previously melted and kept at a temperature not exceeding 55° C. The mixture is continuously stirred until cool, when a white homogeneous cream is produced which is absorbed by the skin with the minimum of friction. In the earlier cases treated a strength of 0.2% was used, but it was later found that 0.125% ointment gave equally good results, and this was employed in the majority of cases.

As the solubility of P.M.C. in water is only 1/20,000, the most efficient method is to incorporate the drug in the melted "eucerin" at 55° C., using careful trituration, and keeping the contents of the mortar heated to 55° C. by means of a water bath. It is essential that the P.M.C. be as evenly dispersed as possible in the melted "eucerin" before adding the distilled water (heated to 85° C.) in small quantities, with rapid stirring. The whole is now allowed to cool rapidly, stirring until a white homogeneous cream is obtained. In the preparation of large quantities the use of a homogenizer would be a great advantage.

For moist surface lesions an adhesive lotion was prepared, designed to fulfil the following requirements: (*a*) Sufficient concentration of P.M.C. to exert the maximum fungicidal and bactericidal effect; (*b*) contact with the affected area for a prolonged period, in spite of excessive perspiration or moistness of the skin; (*c*) ease of application. It was found that the P.M.C.–calamine preparation was much more "dense" than calamine *B.P.* and required a large amount of zinc oxide and glycerin to maintain an even suspension when shaken and sufficient adhesiveness when applied to the infected area. The following lotion was found to be the most satisfactory:

P.M.C. 0.5% precipitated on calamine	gr. 15 (1 g.)
Zinc oxide	gr. 30 (2 g.)
Glycerin	m 30 (1.8 ml.)
Distilled water	to 1 oz. (28.4 ml.)

For large infected areas of deep-seated origin and for "jungle sores" application of a solution of P.M.A. had the desired effect. A concentration of 1/8,000 was found to be the most efficient. Solution is effected by heating up 2 g. of P.M.A. in 250 ml. of hot distilled water, and pouring the almost boiling solution into 750 ml. of cold distilled water. This stock solution can be regarded as 0.2% w/w or w/v for all practical purposes. The desired strength of solution may then be obtained by further dilution with distilled water. The concentrated solution is self-sterilizing.

Method of Application

At the beginning of the investigation cases were treated as out-patients, attending twice daily for inunction. Though results were very satisfactory, it was found that this method was wasteful in the use of the limited amount of ointment available at the time. As the reaction velocity of P.M.C. depends on the concentration applied and the duration of application, it was obvious that a great saving in the amount of ointment used would be effected by applying it on lint and bandaging it on to the affected part for a fixed period. Investigation showed that three to four hours' application of 0.125% strength was sufficient to overcome the infection in all cases of tinea cruris, corporis, and capitis. The affected areas were slightly red and itching for about 24 hours after the treatment; at the end of this time the lesion began to fade out, and in five to six days the skin became normal in appearance, though some slight desquamation usually occurred. In a few resistant cases a second application (of 0.2% strength) was used for three hours.

The types of mycotic infection seen varied enormously, presumably due to the nature of the infecting fungi and the skin reaction of the patient. Dry superficial circinate lesions of large extent and rapid spread alternated with those producing agminate folliculitis, and maculo-papular lesions of both guttate and punctate varieties were found. Epidermophyton infections affecting the groins, palms, and soles were extremely common, as the warm humid climate of S.E. Bengal and the Arakan areas kept the skin continually moist, providing optimum conditions for the growth of fungi.

For all lesions which were reasonably dry a three- to four-hours application of P.M.C. ointment on lint was used. At the end of this time the excess of ointment was wiped off. Where the lesions were moist, application of the ointment was followed by the P.M.C.–calamine lotion. In two to three days the infection was controlled, and rapid healing ensued.

Treatment of Various Infections

The following is a classification of the diseases treated by organic mercurial compounds:

Ringworm of trunk and limbs	200
Epidermophyton inguinale	110
Epidermophytosis of feet	90
"Jungle sores"	50
Infected wounds of various types	50

Epidermophytosis of Feet.—The interdigital spaces were thoroughly cleaned, and all dead skin removed; 0.5% P.M.C.–calamine powder was applied if the affected area was very moist, and when drying had occurred 0.125% ointment was applied twice daily.

Epidermophyton Inguinale (Dhobi Itch).—A single application of ointment was used for four hours' contact. After thorough inunction into the affected area, paying special attention to the infected spreading edge, strips of lint coated with the ointment were applied to the lesion, and fixed in position with pads of cotton-wool and a double T-bandage. The skin became normal in five to six days.

Regarding epidermophyton infection of the toes, recurrences are mainly due to (1) fresh infection from an outside source; (2) reinfection from the patient's own socks or footwear. To overcome the latter, socks should be steeped for an hour in 1/20,000 P.M.A. solution before washing; the boots or shoes can be treated by spraying the interior with a 1/2,000 alcoholic solution of P.M.A.

Jungle Sores.—In forward areas and where the sores were small or of recent origin, compresses of 1/8,000 P.M.A. were applied for 24 hours. This brought about complete disinfection of the sore. Elastoplast was then applied, after painting the surrounding skin with the solution, and very good results were obtained. In base areas, where large chronic sores were seen, the following technique was adopted. (1) Disinfection with 1/8,000 compress of P.M.A. for 24 hours; (2) normal saline compress for a further 24 hours; (3) skin-grafting on the third day. In some of the early cases the grafts did not take well, and it was considered that excess of the C_6H_5Hg ion was the inhibiting factor. The saline lavage and compress for 24 hours did away with this side-effect. It is suggested (Fitz-Gibbon) that a rapid lavage with a 1% thiourea solution would produce the same effect, as the —SH group in thiourea would neutralize any excess of the compound ion.

Toxic Effects

No cases of sensitivity to organo-mercurials were encountered. In some patients, especially those of fair or auburn colouring, slight and temporary vesication occurred, mainly around the spreading edges of the skin lesions. This disappeared in 24 to 48 hours, leaving a clean healthy skin beneath. There appears to be no possible danger of toxic effects due to absorption through the skin. The work of the U.S. External Products Research Institute has shown that the body can deal with daily several thousand gamma of Hg in the form of a soluble mercurial, and that the human skin absorbs only 1/3,800 of that applied to it (*American Perfumer and Essential Oil Review*, 1943; Stock, 1938). No dangerous mercury reservoirs are formed, as in the case of lead. Ten grammes of 0.125% P.M.C. contains about 6,000 gamma of Hg, and the amount absorbed is minute. In this connexion it is interesting to note that all U.S. reconstituted plasma contains 12.5 mg. of phenyl mercuric borate to each 250 ml. unit; this is equivalent to about 8,000 gamma of Hg. No toxic effects have been reported in cases which have had large plasma transfusions, in spite of the considerable intake of organic mercury.

Summary and Conclusions

A report is presented of the successful treatment of 500 cases of skin disease by organic mercurials.

It is pointed out that phenyl mercuric compounds in plant mycology are recognized as possessing specific and rapid fungicidal effects in high dilution, and that similar effects can be obtained in fungus infections in man.

The bactericidal potency of these compounds is extraordinarily high, and as surface antiseptics they were found to be extremely satisfactory.

The method of preparation is described, with the results of treatment in certain infections.

It must be emphasized that the method of application and duration thereof must be strictly adhered to in order to effect rapid cure.

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Medical Memoranda

Lethane 384 on Clothing as a Mosquito Repellent

In 1942 during field tests with various antimosquito repellents a few tests were carried out with "lethane 384." They were only preliminary tests and were never followed up, but they showed that lethane 384 applied locally to clothing—for example, stockings—may have its uses as a mosquito repellent in civil life when dimethyl phthalate either is not procurable or its use is undesirable because of its solvent properties on plastics, paint, etc. Lethane 384 is of course unsuitable as a skin application on account of its irritant and toxic properties.

METHOD

All tests were made in a wood at Brookwood, Surrey, during August, 1942. The mosquitoes biting were mainly *Aedes cantans*, *Ae. punctor*, *Ae. annulipes*, with an occasional *Ae. cinereus*, *Ae. geniculatus*, and *Anopheles claviger*. Treated volunteers and untreated controls sat together in the wood, usually for 15 minutes, and counted the number of bites experienced. Controls and treated men sat a few feet apart. There were two sets of experiments.

Test 1.—Men wore thin cotton stockings (A.T.S. issue), which were sprayed with 50% lethane 384 (25% actual; solvent, a light oil, spray base 775) from a hand-spray held at a distance of 1 ft. (30 cm.). Six pumps were given to the front and six to the back of each leg—23 ml. was used to spray four men. The men then rolled up their socks over the stockings at the ankles, pulled down the trouser legs of the battle dress and waited, strolling about, till the testing times. At the test, the trouser legs were rolled up above the knees and the socks turned over below the ankles, and the men sat on the bank of a dry ditch, together with controls (stockings untreated), and counted the mosquitoes which bit the legs from knee to ankle. The hands and face were covered with gloves and veils.

Test 2.—Men wore denim overalls, which were sprayed thoroughly so that the overalls could be seen to be wetted. The spray-nozzle was held at a distance of about 18 in. (45 cm.). The mean dosage was not less than that delivered on the legs in the first test. In this test the sleeves were rolled up to above the elbow and the number of bites on hands and forearms were recorded. The exposed parts were in no way treated.

RESULTS

Table I summarizes the results for sprayed stockings. The figures in brackets show the number of men in each group.

TABLE I

Time after Spraying (hours)	Period of Test (mins.)	No. of Bites		Biting Rate (No. of bites in control = 100%)		% Protection
		Treated	Control	Treated	Control	Treated
1 –1½	15	3 (4)	6 (4)	50 } 11·7	100	} 88·3
1½–1½	15	1 (4)	28 (4)	3·6 }	100	
4 –4½	15	1 (4)	35 (4)	2·9	100	97·1
5 –5½	15	6 (4)	22 (4)	27·3 } 22	100	} 78
5½–5½	15	3 (4)	19 (4)	15·8 }	100	
Total ..		14 (20)	110 (20)	12·7	100	87·3
Stockings removed: rolled up and put on again next morning:						
24	15	24 (3)	23 (3)	104·3	100	Nil

No. of bites per man:

Mean	0·70	5·50
S.E. of mean ..	0·2012	0·7159

Difference of means is statistically significant.

It is evident that lethane on thin fabrics such as stocking material is a very effective repellent, and it has a useful effect for a number of hours. If a bigger dosage was given, probably an even higher degree of protection might ensue for a longer time.

The second test was made in order to see if a complete spraying of the clothing would protect exposed parts which were otherwise unprotected—for example, hands and face.

TABLE II

Hours after Spraying	Test Period (mins.)	No. of Bites		% Biting Rate	
		Treated	Control	Treated	Control
0-1	15	1 (4)	14 (4)	*A. claviger* mainly	
	15	1 (4)	6 (4)		
	15	0 (4)	9 (4)		
Total ..		2 (12)	29 (12)	7	100
1-2	15	2 (4)	0 (4)		
2-3	15	1 (4)	4 (3)		
	15	5 (4)	0 (3)		
	30	8 (5)	11 (4)		
Total ..		14 (18)	15 (14)	73	100
3-4	30	1 (4)	4 (4)		
	15	0 (3)	0 (3)		
	15	0 (3)	7 (3)		
Total ..		1 (14)	11 (14)	9	100
4-5	30	15 (4)	9 (4)		
	15	5 (3)	2 (3)		
Total ..		20 (11)	11 (11)	182	100
5-6	15	0 (4)	1 (3)		
	15	3 (4)	0 (4)		
	15	1 (3)	2 (3)		
	30	6 (3)	4 (3)		
Total ..		10 (17)	7 (16)	134	100
6-7	15	0 (4)	14 (3)		
	15	0 (4)	10 (3)		
	15	0 (3)	7 (3)		
Total ..		0 (11)	31 (9)	0	100
Grand total		49 (71)	104 (65)		

No. of bites per man .. 0·69 1·60
S.E. ± .. .. .. 0·1650 0·2290
Difference of means is statistically significant.

From the results shown in Table II it is evident that no great protection is afforded, and that spraying the clothing is not a reliable method of protecting exposed and otherwise unprotected parts of the body. Sometimes the controls were bitten more often and sometimes the treated, but on the whole, as shown by the grand total, a degree of protection is given. This does not bear an obvious relation to time over a seven-hour period.

From these preliminary tests it seems that lethane shows considerable promise in affording protection to those parts of the body immediately underneath the treated cloth, but that it is unreliable for a general protection by spraying all the clothing.

I acknowledge with thanks the grant received from the E. L. Hamilton Memorial Fund at the Ross Institute to enable me to prepare wartime work for publication. Thanks are also due to the Director of Hygiene, the War Office, for his permission to publish these results.

C. G. JOHNSON, D.Sc.,
Ross Institute of Tropical Hygiene.

New Westergren Technique

The following technique for the Westergren sedimentation rate has been found useful. It is simple once it has been mastered; it avoids the necessity of putting lip to tube, and is of value when only a few tests are made—for example, in the ward or consulting-room.

A 2-ml. or Westergren syringe is used, and the sodium citrate is drawn up to the approximate mark—i.e., 0.4 ml.—the blood is then drawn up to the 2 ml. level and the needle withdrawn from the vein in the usual way. The plunger is pulled out to the full range, giving an air space in the syringe. By rocking the syringe, with the needle attached, the blood and the citrate are mixed. The syringe, with the needle still attached, is then held vertically with a small piece of cotton-wool over the orifice, and all air bubbles are expelled.

The syringe is held in the right hand between the tips of the index and middle fingers, with the thumb on the plunger (a stiff syringe is better controlled by holding it between the tips of these fingers and the thumb, with the plunger held against the base of the index finger, and using a squeezing motion). The sedimentation tube is held between the thumb and the last three fingers of the left hand, leaving the index finger free to cover the end. Both the tube and the syringe are held horizontally; the tube may need a slight downward tilt, and the needle is introduced 2–3 mm. into the tube, using a little rotary action of the needle at the orifice to smear the blood round the lumen; the plunger is now pressed home slowly. The blood will run up the tube; on reaching the 200 mm. mark the index finger of the left hand immediately seals the orifice. The needle is then withdrawn and the tube placed in the rack.

It is essential to have a clean tube, otherwise the blood will leave bubbles along the sides and will not run up the tube. I use a small pledget of wool pushed through the tube by two common wooden aural applicators.

E. H. HUDSON, M.B., F.R.C.P.

The "Innocent" Systolic Murmur

The following example may be of interest as testifying to the "innocence" of a certain type of systolic murmur, remaining unchanged and symptomless over a period of 26 years.

CASE HISTORY

A solicitor aged 30 consulted me on July 13, 1920. He stated he had made several attempts to enter the Forces during the war of 1914–18 and had been rejected by no fewer than five medical boards in turn on diagnosis of V.D.H. and congenital heart disease. Alarmed at this he sought to know his true position and how to order his future life.

His previous history was uneventful. He gave a vague statement of having rheumatic pains during school-days, but had no serious illness of any kind. He had led a normal active life from childhood, through adolescence, to manhood, and was completely unconscious of any symptoms referable to the heart.

On examination there was no clinical enlargement of the heart; the apex was well within the nipple line. No thrill could be felt. There was a loud rasping systolic murmur heard over the whole praecordium, maximal over the pulmonary area. The murmur varied slightly on respiration but not on change of posture; and ended in a curious "click" suggestive of an exocardial origin. The pulse rate was 84 (nervous under examination); blood pressure 140/80; and the response to an exercise test was good. I gave the opinion that his murmur had no pathological significance, and advised him to ignore it and carry on his normal life—an opinion which was corroborated subsequently by Prof. Wardrop Griffith of Leeds.

I saw him again over a year later, on Nov. 16, 1921, when he was contemplating insuring his life. I found his condition unchanged, and advised him to propose for insurance. He did so, and was accepted with a premium loading of 10%.

Recently, 26 years later, I have had the opportunity of examining him again, on July 22, 1946. Now at the age of 56, he leads a life of normal activity for a man of his years and has no discomfort or distress with moderate exercise nor any symptoms attributable to the heart. The physical signs remain unchanged; no enlargement of the heart; no thrill; systolic murmur loud and rasping, as before, with the same curious terminal click; pulse rate 96; B.P. 170/80 (heart under nervous excitation due to examination).

COMMENT

During the first world war many similar cases having an innocent systolic murmur were turned down as unfit for service, labelled V.D.H., and suffered a lifelong disability in consequence. In the recent war the insignificance of this murmur has been widely recognized by medical boards. Nevertheless, from experience gained in service as medical specialist on pensions boards it would seem that not a few cases have slipped through the meshes of the net.

Harrogate WILFRID EDGECOMBE, M.D., F.R.C.P., F.R.C.S.

Reviews

INHALATION THERAPY

Principles and Practices of Inhalational Therapy. By Alvan L. Barach, M.D. (Pp. 315; 59 illustrations. 25s.) Oxford: Blackwell Scientific Publications.

The author of this book has devoted his professional life to the study of oxygen therapy and allied topics, and he now gives a clear and practical account of these forms of treatment. The book begins with an interesting description of the historical background of inhalation therapy, which has developed in parallel with advances in chemical knowledge. Although the prophet Elisha may be regarded as the pioneer of inhalation therapy, efficient methods of administering oxygen were not developed and popularized until it became necessary to treat large numbers of men with pulmonary oedema caused by gas poisoning in the first world war. The demands of high flying in the second world war have meant a similar advance in oxygen therapy, and it is a pity that so little of this is reflected in Dr. Barach's book, presumably owing to secrecy regulations. Never was there an age in which men were more reluctant to turn swords into ploughshares.

It is common knowledge that the efficiency and comfort of oxygen masks have been greatly improved, and it has been suggested that the decompression chambers which were used for the training of Air Force pilots would be of great value in the treatment of asthma by pure oxygen at low pressure. Dr. Barach proceeds to discuss the use of inhalation therapy in different morbid conditions, devoting most space of course to diseases of the heart and lungs. Like most of those who have actually worked with oxygen he is sceptical of some of the theoretical arguments which have been used against oxygen therapy, and in particular he believes that the frequency of arterial anoxaemia and tissue anoxia in heart disease has been underestimated. It is more troublesome to give oxygen than digitalis, and it may well be that some of us have rationalized our desire to avoid trouble.

Barach's personal contributions have been particularly related to the use of helium and positive pressure. Helium is not likely to be a practical proposition in this country, but positive-pressure devices can be very simply arranged and are of the greatest value in the treatment of asthma and pulmonary oedema. Positive pressure cuts down the venous return to the heart and has much the same effect as a venesection in heart failure. It seems likely that the expiratory grunt of pneumonia is Nature's way of trying to obtain a positive pressure. The last quarter of the book consists of descriptions of various types of apparatus and simple methods of analysis. Oxygen tents have been rendered much less fearsome by the introduction of transparent canopies for adults and open-top tents for children. Inhalation therapy in the narrow sense of inhalation of vapours of adrenaline and sulphonamides is also considered, but this section unfortunately appears to have been written before the introduction of penicillin and streptomycin.

This book has been written for the practising clinician, and there is nothing in it to repel those who have forgotten all their physics and have left physiology a closed book. Oxygen is the most urgent and least advertised element for the maintenance of life, and our patients might get on better if we thought less about vitamins and more about oxygen. The book is well printed and illustrated and can be strongly recommended to all who are engaged in the treatment of acute illness or the provision of facilities for that purpose.

SIR JONATHAN HUTCHINSON

Jonathan Hutchinson: Life and Letters. By Herbert Hutchinson. (Pp. 257; illustrated. 12s. 6d.) London: William Heinemann Medical Books Ltd. 1946.

This is the life history of a remarkable man, the like of whom it is improbable we shall see again. It is written from a sense of family piety by a nephew who is not a medical man but who, among much that throws a charming light on his private life, gives full prominence to Hutchinson's unique position in the profession of his time. As Mr. Johnston Abraham, who knew him, says in a foreword, "he was world-famous as a dermatologist and a syphilographer, an ophthalmologist and a pathologist, besides being a good general surgeon and an authority on neurology." This seems enough for fame, but he was also an F.R.S., President of the Royal College of Surgeons, the recipient of many honorary degrees, author of countless papers in medical and other journals, author of several important books; was for a year Editor of the *British Medical Journal*; was the originator of the Pathological Museum, which is a regular and popular feature of the Association's Annual Meeting; was for 23 years on the surgical staff of the London Hospital, and during part of that time on the staffs of the City of London Hospital for Diseases of the Chest, the Metropolitan, Blackfriars Skin, and Moorfields. At one time or another he was president of every one of the leading medical societies of London, and seems to have lectured in almost all parts of the country on medical and other subjects. This formidable list by no means exhausts all his activities. He founded the New Sydenham Society, which over a period of years published translations of important Continental medical books. As a teacher he had a great reputation, as was testified by many, including Sir Frederick Treves. His work as a pioneer in postgraduate medical education deserves special mention. He was well in advance of his time, and the Polyclinic, well known for some years as a centre of advanced instruction, failed probably because it was attached to no hospital. As a clinician he was supreme. Osler said that "no individual in this country has made so many useful observations upon so many diseases." Hutchinson is a standing proof that hard work is no obstacle to the attainment of a ripe old age. When he died within a month of his 85th birthday, though he had retired from practice for some years, he was still active with one of the main interests of the latter half of his life, namely, a new kind of museum, an educational museum into which he had put an immense amount of work and from which he obviously got great pleasure. He built and founded two of them, one at Haslemere, his country residence, and one at Selby, his birthplace. A great authority on the subject wrote that Haslemere was "the one effective educational museum in this country." It is good to know that this incredibly hard worker had a very happy family life. He was one of a large Quaker family and had ten children of his own. This book deserves a warm welcome from our profession and from all who like to read of a life well spent.

DIFFICULT LABOUR

The Management of Obstetric Difficulties. By Paul Titus, M.D. Third edition. (Pp. 1,000; 426 illustrations, 8 coloured plates. 50s.) London: Henry Kimpton.

There is more in this excellent book than meets the eye. Its title is perhaps a little misleading, for, as the reader soon discovers, the author is so enthusiastic about his subject that he includes much more than one would expect to find under the heading of obstetric difficulties. There are, for example, sections dealing with sterility, its investigation and treatment, the diagnosis of pregnancy, ante- and post-partum care, general systemic diseases complicating pregnancy and the puerperium, and a section dealing with the newborn infant which discusses among other things such subjects as the indications for circumcision and the relationship of erythroblastosis to icterus neonatorum. Those sections dealing with dystocia, haemorrhage, puerperal complications, and obstetric operations are familiar to readers acquainted with the two previous editions of this book. They have been revised in the light of new discoveries such as penicillin and the Rh factor, and modified in accordance with an added experience of *x*-ray pelvimetry, caudal anaesthesia, and various operative techniques such as extraperitoneal Caesarean section.

It is refreshing to find that in a work such as this the emphasis is still placed on clinical judgment even while the accessory aids to diagnosis are carefully recorded and assessed. Readers this side of the Atlantic will be surprised at the pessimism which leads to the adoption of such radical surgical measures as the Porro hysterectomy and extraperitoneal Caesarean technique for the potentially and actively infected cases. The lower segment technique has given such excellent results in these cases that few operators in this country would resort to more radical surgery. The same readers will be surprised to learn that chronic

nephritis is a common complication of pregnancy, and will be critical of the statement that 26% of the cases of toxaemia at Johns Hopkins Hospital are found to be suffering from this disease. In discussing the oblique and transverse lie of the foetus the author emphasizes that this is usually a sign of disproportion between the foetus and pelvis, yet rather surprisingly fails to warn of the possibility of placenta praevia.

This edition, in spite of paper restrictions, is beautifully produced and lavishly illustrated.

PSYCHOTHERAPY IN GENERAL PRACTICE

Psychotherapy in General Medicine. Reports of an Experimental Postgraduate Course. By Geddes Smith. (Pp. 38. Single copies 25 cents.) New York: The Commonwealth Fund, 41, East 57th Street. 1946. (London: Geoffrey Cumberlege, 2s.)

This booklet describes a fortnight's postgraduate course for general practitioners given in the University of Minnesota. The objects of the course were: (1) To give the doctor a feeling of the dynamic qualities and the value of the doctor–patient relationship; (2) to introduce him to the broad patterns of human motivation and to the common causes and backgrounds of emotional disturbance; (3) to lead him to think in terms of the relation between emotional disturbance and illness; (4) to teach him easily understandable methods of therapy so that he can treat a number of such patients; (5) to give him some knowledge of more malignant conditions so that he may refer them to specialists. The first three of these objectives were attained adequately. The fourth could not of course be reached in a fortnight, but it was thought that growing experience would gradually increase the doctor's ability to carry treatment further. The fifth was at least sufficiently achieved to ensure that the doctors would not commit serious errors.

Great keenness for and appreciation of the course was expressed, and the instructors were encouraged by discovering that men in "general practice" could learn so much and so readily about ways of helping psychoneurotic patients. Inspired by this precedent it is hoped that much more will be done along these lines in this country.

OUTLINE OF SKIN DISEASES

Aids to Dermatology. By R. M. B. MacKenna, M.D., F.R.C.P. Third edition. (Pp. 310; 6s.) London: Baillière, Tindall and Cox. 1946.

This useful little volume has changed a good deal since the last edition. It has lost the section on venereal disease, which has now been segregated into a separate volume in the Students' Aids Series written by T. E. Osmond. The dermatological part has undergone some revision and expansion, and one or two points to which we took exception in the last edition have now been amended. But the book remains a handy size, easily slipped into the pocket, and not taking much room in the baggage of any practitioner who may be ordered off to one of the far-flung outposts of Empire. He will continue to find it informative and practical.

As a brigadier in the R.A.M.C. the author gained wide knowledge of the practical problems of dermatological therapeutics on a large scale during the recent war, and it is no doubt greatly due to him that for the first time in military history the importance of skin disease was adequately recognized as a cause of disability in an army in the field, apart from the role of cutaneous parasites in conveying serious and often fatal disease. In this little book he has been able to make some of the results of his experiences available to a wider public, and it is therefore additionally valuable. The chapter on diseases due to animal parasites, which includes scabies and pediculosis, is particularly good. Unlike most books on dermatology there are very few illustrations—only about six figures—diagrams of the more important parasites. But this deficiency is easily understood, for it would be quite impossible to illustrate it fully without destroying its handiness and (another factor of some importance) materially increasing the moderate price at which it is sold.

Jones, A., Finds the Body, by HUGH MCEVOY (John Gifford; 8s. 6d.) is a brisk story of murder in a military hospital during the war. The author is a doctor, and, as one might expect, the book is happily free from both the scientific blunders and the sadistic grunting that have of recent years so often disfigured such works.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Essai de Mesure des Phénomènes Electriques Accompagnant la Pensée Emotive et l'Influence. By N. T. Loressios and M. Marchal. (Pp. 94. 100 francs.) Paris: Librairie Maloine. 1946.

A study in electroencephalography from the point of view of relating particular wave patterns to the individuals from whom they were obtained.

Trabajos del Hospital del Rey. Volume V. By Prof. A. M. V. de Simon *et al.* (Pp. 648. No price.) Madrid. 1946.

A collection of papers by various authors on a variety of medical and surgical conditions. In Spanish.

La Penicilina en Cirugia Maxilo-Facial. By C. M. Squirru, M. B. Galea, and H. D. Bianchi. (Pp. 158. No price.) Buenos Aires: Alfa. 1946.

Contains a general account of penicillin as well as a detailed description of its use in maxillo-facial surgery. Illustrated. In Spanish.

A Tiróide. By H. de Lacerda. (Pp. 151. No price.) São Paulo. 1946.

A monograph on the thyroid gland and its physio-pathology and disorders. Many illustrations. In Portuguese.

Cardiopatologia. By A. M. Michelazzi. (Pp. 469. No price.) Turin: Rosenberg and Sellier. 1946.

A comprehensive account of the cardiovascular system in health and disease, designed for medical practitioners and students. Includes diagrams, skiagrams, and electrocardiograms. In Italian.

Le Onde Ultra-Corte Attraverso l'Encefalo. By G. C. Giorgi. (Pp. 40. No price.) Turin: Minerva Medica S.A. 1946.

A monograph on the effects of ultra-short waves on the brain, with experimental evidence and a description of the apparatus used.

Minor Surgery. By Cecil Fleming, *O.B.E.*, M.Ch., F.R.C.S. Twenty-third edition. (Pp. 406. 14s.) London: J. and A. Churchill. 1946.

The new edition of this well-known textbook has been considerably revised, particularly the sections on the treatment of wounds and fractures. Intended for house-surgeons, dressers, and junior practitioners.

Music in Medicine. By Sidney Licht, M.D. (Pp. 132. $3.) Boston: New England Conservatory of Music. 1946.

Treats of music as occupational therapy, background music, mealtime music, psychiatry and music, with detailed instructions for providing music as therapy and entertainment.

Klinische Elektrokardiographie. By Max Holzmann. (Pp. 624. 50 Swiss francs.) Zurich: Fretz and Wasmuth. 1946.

A profusely illustrated work on electrocardiography.

Vitamine, Hormone, Fermente. By R. Abderhalden. (Pp. 250. 14.50 Swiss francs.) Basle: Benno Schwabe. 1946.

A summarized account of the chemistry, physiology, therapeutic uses, and available preparations of the vitamins, hormones, and body ferments.

Ernährungsprobleme in Mangelzeiten. By Prof. A. Fleisch. (Pp. 518. 32 Swiss francs.) Basle: Benno Schwabe. 1947.

Problems of diet in time of famine, with particular reference to the war years.

Dynamische Reaktionspathologie. By Prof. K. von Neergaard. (Pp. 317. 24 Swiss francs.) Basle: Benno Schwabe. 1946.

Develops a new biological approach to medicine.

Entstehung und Früherfassung des Portiokarzinoms. By H. Wespi. (Pp. 183. 18 Swiss francs.) Basle: Benno Schwabe. 1946.

The origin and early diagnosis of carcinoma of the cervix uteri. Many photomicrographs.

Die Scheuermansche Krankheit. By J. E. W. Brocher. (Pp. 91. 11 Swiss francs.) Basle: Benno Schwabe. 1946.

A monograph on Scheuerman's disease, or adolescent kyphosis due to vertebral osteochondritis.

Psychoses et Névroses. By Prof. H. Baruk. (Pp. 136. No price.) Paris: Presses Universitaires de France. 1946.

An introduction to the fundamentals of psychiatry as the basis of therapeutic principles.

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ENDOCRINES IN GYNAECOLOGY

Gynaecological endocrinology will be thirty years old this year. The beginning of this relatively young branch of medical science dates from Stockard and Papanicolaou's discovery in 1917 of the effect of the follicular liquor in producing oestrous changes in the vaginal mucosa. Thirty years is a short span in the life of any branch of medicine, and particularly that concerned with one of the most complex systems in the body, a system which is constantly changing and is susceptible to so many external and internal influences. It is long enough, however, for a sober appraisal of what has been accomplished and of what remains to be discovered.

No one is more competent to give such an appraisal than Mr. Aleck Bourne. Elsewhere in this issue (p. 79) readers will find his summing-up of the present position. It is not likely to encourage over-enthusiasm for endocrine treatment in gynaecology. The difficulties of such treatment are wisely emphasized. They depend on a variety of factors. Individual species' differences in the reaction to hormones, even in species that are closely allied, have led to many errors and misconceptions when experiments carried out on animals have been interpreted in terms of human endocrinology. Not only are the conditions of the laboratory entirely different from those of clinical medicine, but each individual animal species, including man, appears to be unique in its endocrine make-up and thus in its reaction to hormones artificially administered. Adequate dosage is another problem and one which for the present has been solved only with regard to oestrogens. Other difficulties arise because the endocrine system is subject to continual rhythmic changes. Finally, the effect of the emotions further complicates changes in a system already subject to nervous and chemical influences, so that the effect of any known stimulus, emotional, nervous, or chemical, in the present state of knowledge is usually incalculable.

Bourne has introduced a new idea of great importance—that of endocrine receptors. So far the emphasis has been mainly on the stimulating agent—that is, on the hormone rather than on the organ receiving the stimulus. It seems strange that an idea so obvious should not have received closer attention in the great mass of work that has poured out in books and journals of all kinds in the last two decades. It appears that no one has ever inquired seriously into the reason why one organ or part of an organ, as for example the uterine endometrium, will react strongly to a hormonal stimulus that has little effect on other organs. But the matter is even more difficult because, continuing with the same example, the endometrium will react to progesterone only after it has been primed with oestrogen. Bourne's remarkable example of a case in which the vaginal mucosa reacted normally to oestrogen whereas not the slightest evidence of reaction could be demonstrated in the uterus leads immediately to the conclusion that the uterus lacked something which was essential to its response. This conception of receptors within organs susceptible to hormonal influences though inevitable is a little disquieting. It reveals only too plainly the depths of our ignorance in a field where progress has often seemed so promising.

It is a relatively simple matter to summarize what is at present known about the hormones of the ovary and the anterior pituitary and their relations to the menstrual cycle and to pregnancy. Excellent descriptions with diagrammatic illustrations appear in textbooks of anatomy, physiology, endocrinology, and gynaecology. What is usually insufficiently emphasized is the delicate balance of the endocrine system as a whole and the dependence of one organ of internal secretion on another, or on all the others. Perhaps it is the anatomical remoteness of one gland from another, as of the pituitary from the ovary, that has led to this lack of appreciation of an all-important fact—that the endocrine system must be considered as being as closely integrated as, for example, the central nervous system.

The difficulties of the application of our as yet scanty knowledge are not overlooked by Bourne. Indeed he makes the comment that in face of all the difficulties success with hormone treatment should be deemed more remarkable than failure. In setting out the practical therapeutic value of sex hormones he comes to the conclusion that certain success can be forecast only in the suppression of lactation by oestrogens. Cure or relief is also to be expected in kraurosis vulvae and senile vaginitis, both probably a part of the same process of genital atrophy that occurs at or after the menopause. The value of endocrines in many other conditions for which they have so often been used in the past is rightly doubted. Uterine hypoplasia, often with primary or secondary amenorrhoea, can never be permanently cured by sex hormones. Artificial menstruation can be established by suitable dosage with oestrogens and progesterone, or sometimes with oestrogens alone, but if the trouble is of an organic nature permanent cure is impossible. Fortunately, in many cases amenorrhoea is a temporary affair due perhaps to an environmental change or to emotional disturbance, and regular menstruation returns often without, or in spite of, treatment.

In metropathia haemorrhagica the logical treatment is to give progesterone or testosterone, but often very large doses are needed and relapse occurs when treatment is stopped. In functional conditions such as spasmodic dysmenorrhoea, puberty menorrhagia, and menopausal disturbances the effect of treatment is variable and uncertain, probably partly on account of the large emotional element in many cases and partly because of our imperfect understanding of the nature of the disturbance. In many of these conditions, however, the judicious use of the correct hormone in the right dose may lead to improvement. Much has been written in recent years about habitual abortion, and doubt has been cast on the value of progesterone in these cases. Bourne favours treatment with progesterone, though he questions the value of injections on account of the inevitable fluctuation of the hormone level

when it is given by this means. He favours implantation of a crushed pellet of progesterone beneath the rectus muscle sheath, though he admits that his evidence in favour of this method of treatment is as yet inadequate.

This admirable summary of the present status of clinical endocrinology in gynaecology ends with suggestions for the future. The first essential is sound clinical research, and this raises the problem of how such research is to be accomplished. It must clearly go hand-in-hand with developments from animal experiments and from work on the biochemistry of sex hormones, including both the further study of known hormones and the exploration of possibilities of new synthetic substitutes for those naturally occurring. The discovery of the synthetic oestrogens, stilboestrol, hexoestrol, and dienoestrol, has been of great value in making it possible to reproduce the effect of naturally occurring hormones cheaply and easily, though in some ways it constitutes a real risk when these substances are prescribed by those not sufficiently conversant with their dangers and limitations, particularly, as is often the case, after inadequate investigation.

What, then, is needed for the future? Surely clinical research of the type envisaged is quite beyond the scope of the average gynaecological clinic, where cases needing endocrinological investigation and treatment are seen together with sterility cases and such purely surgical problems as prolapse and tumours of the pelvic organs. Investigation and treatment of disorders of the endocrines can be satisfactorily carried out only in large units equipped for all the elaborate investigations needed: biological and chemical hormone assays, histological examination of biopsy specimens, estimations of the basal metabolic rate, to mention only a few. A further advantage of the large unit is that it offers the opportunity, so often lacking in the past, of studying and treating a reasonably large series of cases of any one condition, with adequate controls. The work of the practical gynaecologist is often limited by the lack of facilities and by the pressure of more urgent surgical cases.

It may be argued that this will tend to lead to further specialization in gynaecology, a subject already highly specialized, but it is difficult to see how progress can be made from our present state of knowledge except along such lines. This is not to say that the work of the last thirty years has been wasted but rather that much of it has been misdirected, often through a misunderstanding of the magnitude of the problem. All the work so admirably summarized by Bourne must be regarded as a preliminary survey which has opened up great possibilities.

CANCER RESEARCH INTENSIFIED

The British Empire Cancer Campaign, at its annual meeting recently, rejoiced in a record income and in its ability to allocate £90,000 to various centres for cancer research in the year 1947. This is half as much again as the last allocation and a figure never before approached in the history of the Campaign, which now goes back for nearly a quarter of a century. To minds still bemused by wartime millions it may seem a modest sum for an attack on one of the chief scourges of mankind, especially when it is apportioned among some twenty research centres. The chief value of the British Empire Cancer Campaign, however, is not that of a money-raising flag-day organization, appealing to the sympathies and apprehensiveness of the public: it is that of a central office for the distribution of resources according to a scientific assessment of claims and promises of performance. It works neither in a haphazard nor in a stereotyped way, and exercises the qualities of good generalship in sending reinforcements to the various theatres where the engagement seems closest and additional help most likely to make a breach in the enemy's line. The work done in the various laboratories, physics departments, clinics, operation theatres, and hospital wards is correlated and the workers are organized into a team. Through its Scientific Advisory Committee, of which Lord Horder is chairman, and to which the Royal Society and the Medical Research Council contribute half the membership, the whole field of cancer research—biochemical, biological, physical—is surveyed.

The rise of nuclear physics, the possibilities of which are foreseen only vaguely, dominates the picture presented in the Twenty-third Annual Report. Just before the war there was much discussion about the provision in this country of a cyclotron for the production of neutron beams for biological research. Later developments suggested something more ambitious, a national radiological institute for the investigation of the biological effects and therapeutic value of radiation. Towards the end of 1945 the Campaign called a conference at which the Royal Society, the Ministry of Health, and other bodies were represented. It had no sooner assembled than the announcement was made that the Government had set up a research committee on nuclear physics, and that three of its subcommittees were to deal with protection, tracer elements, and clinical aspects. The programme was therefore left in the hands of the Government, and, it is understood, is being actively pursued. Meanwhile some interesting work on tracers is being carried out at the cancer research department of St. Bartholomew's Hospital and the department of pathology of St. Thomas's Hospital. They have been experimenting respectively with radioactive sulphur and radioactive phosphorus for the study, in the one case, of the mode of action of anti-carcinogenic substances and, in the other, of the mechanism of mitosis in transplantable rat sarcoma. Tracers allow a particular element to be traced through a long series of metabolic changes in the animal, and reveal the dynamic conditions prevailing within any type of cell or tissue. For instance, it is hoped to trace the dissemination of metastases from the Sheffield transplantable rat sarcoma (RD/3) by administering radioactive phosphorus (P^{32}) to the tumour-bearing animal so that it may become incorporated in the phosphorus-containing compounds of the tumour cells. Suspensions of these cells are then injected intracardially into rats, whose organs are later tested for radioactivity. Light may thus be thrown on why these tumours usually develop in certain organs, such as the adrenals, liver, lungs, and lymph glands, and leave others—e.g., brain, kidneys, and spleen—unaffected. It is possible that radioactive stable isotopes may presently be suitable for the actual

treatment of cancer. Work is also proceeding at many centres—the Mount Vernon, the Royal Cancer, and the Middlesex hospitals, and especially the Strangeways Research Laboratory at Cambridge—with the object of clarifying the factors which determine the response of cells to radiation and of making a more precise correlation between the response of normal or malignant tissue and the changes sustained by the cell components.

The virus hypothesis of the aetiology of cancer has been vigorously pursued during the last few years by many workers, not in this country alone. Following upon a report by Prof. W. E. Gye on his visit to centres of virus research in the United States and Canada, a co-ordinated scheme for an intensification of research along these lines has been worked out by the Scientific Advisory Committee, and the Grand Council has been asked to allocate £25,000 to cover the cost of these investigations during the next two years. Reports of work on viruses come from many centres, notably the Middlesex Hospital laboratories, where a new strain of Shope papilloma virus with promising properties has been obtained. Another continuing piece of research is on chemical carcinogenesis, far too big a subject to be comprehended in one annual report. The defect of annual reports is that some completed story, or at least some effective "curtain," is not attainable, for a subject like cancer research goes on from year to year. One discovery which bids fair to throw more light on the history and behaviour of malignant growth is reported from the Chester Beatty Institute of the Royal Cancer Hospital under Prof. E. L. Kennaway, who at the recent annual meeting of the campaign received the Garton prize and medal for his work in this field. It has been ascertained that various aminostilbenes are an important class of carcinogenic agents, tumours being produced by them not only locally but at a distance as well. From the same institute and also from the Middlesex Hospital laboratories and the Christie Hospital, Manchester, come accounts of work on urethanes (carbamic esters), again on experimental animal tumours. Clinical trials of urethane were carried out in advanced and inoperable cancer in man, but they were mainly negative. Nevertheless it follows from this work that while urethane, a mitotic poison, has little or no useful effect on malignant disease as a whole, it does bring about alterations in leukaemia similar to those obtained with *x* rays.

Each year the report of the Campaign includes an analysis of cancer cases collected from London hospitals. In 1946 nearly 1,500 cases of cancer of the rectum and anus were analysed. Follow-up statistics in cancer are of great value, but they are open to many fallacies. However, the committee in charge of the clinical investigation has had the criticism and help of Dr. Percy Stocks, medical statistician to the General Register Office. One feature brought out in this work is the influence of the hereditary factor in rectal cancer. It is not conspicuous, though the figures are suggestive and seem to support the view that there is a hereditary factor relating cancer to a particular organ. The most useful feature of these analyses concerns the effect of delay in treatment. In 16 or 17% of these patients the symptoms were of more than six months' standing when they first consulted a doctor: in 20% a rectal examination was not made until more than a month after the first consultation. In more than half of those treated radically the disease was of more than six months' standing. Radical operation was possible in only 32% of all cases, and of those only one-third were still in the early stages. The five-year survival rate for all radical operations was 30%, and when estimated by actuarial methods the five-year expectation of life varied from 74 to 84% of the normal for early cases, down to 33% for the more advanced. Some statistics are given from the Marie Curie Hospital concerning cancer of the body of the uterus, a variety which has been considered rather resistant to radiation treatment, but, leaving out the cases in an advanced stage of the disease, the five-year survival rate at Marie Curie for the cases subjected to radiation is said to compare very favourably with that of surgery. Another statistical report is from Leeds, concerning 300 cases of small skin cancers treated under carefully controlled dosage by single applications of superficial *x*-ray therapy. The analysis showed disappearance of the lesions within two months of treatment, and only one case developed a small radionecrosis, which healed later. This efficacy of the single application technique is difficult to reconcile with the present conceptions of radiobiology. The Christie Hospital, using a single exposure technique, states that it seems to produce an unusual incidence of late *x*-ray effects.

The report of the Campaign, which again owes much to Mr. J. P. Lockhart-Mummery's editorship, shows how slow, laborious, and intricate, how often contradictory, and how seldom attended by any spectacular or even conclusive results the work on cancer must be. It is to be hoped that nobody will suppose that cancer research will now become solely a State responsibility. Government encouragement is very welcome, but the initiative of the guerrilla soldier, the untrammelled pioneer, the free researcher, has been of no small advantage in this complicated strategy.

INFLUENZA VACCINE

Since the discovery of influenza virus A by Andrewes, Smith, and Laidlaw in 1933 numerous attempts have been made to immunize human subjects by subcutaneous or intramuscular injection, or by intranasal insufflation of vaccines prepared from suspensions of infected murine lungs, chick embryos, or chick embryo tissue cultures. These various preparations, in the active or inactive state, gave variable results in the hands of different investigators, probably because of difference in antigenic potency, methods of inactivation, and other technical factors. In 1941[1 2 3] it was found that the allantoic fluid of infected chick embryos often had a high virus content. Further improvements in technique resulted in the regular production of high-titre fluid, and this source of virus has been used almost exclusively of late for the production of vaccines. The virus in the allantoic fluid has been concentrated by adsorption on to precipitates found in the fluid on the addition of protamine, alum, or calcium phosphate; by freezing and thawing; by adsorption on to and elution from fowl red blood corpuscles; and by sedimentation of the virus by high-speed centrifugation.

[1] Burnet, F. M., *Austral. J. exp. Biol. med. Sci.*, 1941, **19**, 291.
[2] Henle, W., and Chambers, L. A., *Proc. Soc. exp. Biol. N.Y.*, 1941, **48**, 713.
[3] Nigg, C., Wilson, D. E., and Crowley, J. H., *Amer. J. Hyg.*, 1941, **34**, Sect. B, 138; Commission on Influenza, *J. Amer. med. Ass.*, 1944, **124**, 982.

A large-scale trial, in the U.S.A. in 1943, of vaccine containing formolized influenza viruses A and B concentrated by adsorption on to and elution from fowl red blood cells indicated that suitable vaccines injected several weeks previous to or during the first few days of an epidemic might reduce the attack rate to one-fourth of that in control groups. In one centre, where the inoculations were carried out six to eight weeks before the onset of the epidemic, the vaccine was of little value. The effect of vaccine will depend on the antibody level of the serum of the individual and the amount of antigen injected. There is an optimum titre or threshold level of antibody in the serum (as measured by the chicken red-cell agglutination test), above which one may say the individual is probably immune, and, below, potentially susceptible. Henle and his colleagues found this titre to be 1 : 128. Henle noted that those with the lowest pre-vaccination level (1 : 16) showed also the lowest titre after vaccination. With increasingly higher pre-vaccination titres, the post-vaccination levels became markedly higher and the number of units of antibody formed likewise increased up to a certain maximum. Above this maximum there is usually no increase after vaccination.

Multiple injections of vaccine at weekly intervals do not improve the results obtained by a single administration, although several times as much vaccine may be used. Inhalation of vaccine in addition to a single intramuscular injection was without measurable effect, so far as serum antibody was concerned, in Henle's group.[4] The antibody response definitely improved, however, with increase in the dose of antigen, although there was no difference between the antibody levels after six months in those who had received 1 ml. of protamine-concentrated virus vaccine and those who had received 3 ml. of allantoic fluid. The protection in either case would be sufficient for only one winter so far as influenza A is concerned. Henle has recently tested the possibility of improving immunization by addition to the vaccine of substances which would allow prolongation of the antigenic stimulus—a method which has been used by Freund[5] with various bacterial antigens and by Friedewald[6] in the vaccination of experimental animals against influenza. The vaccine consisted of an emulsion of centrifugally concentrated virus in "Falba" (a proprietary adsorption base said to be a mixture of beeswax, paraffin oils, and oxycholesterins extracted from lanolin) and mineral oil in a ratio of 1 : 1 : 4. The dose was 0.3 ml., which contained 0.4 mg. of protein and was injected subcutaneously. There were no obvious reactions among the 80 recipients. Palpable nodules appeared in the subcutaneous tissues at the site of inoculation and persisted for 6 to 18 months. In two instances abscesses formed at the end of the second month. The immunization effect of the vaccine seemed to have been considerably enhanced, especially against influenza B. Practically all subjects passed the "threshold" antibody level within two weeks and the titres remained high for at least 12 to 18 months. Such a vaccine may afford protection for at least two winters. An interesting point was that the antibody titres rose in spite of high antibody levels in the blood stream. It is suggested either that the antigen from the oil emulsion is protected against the antibodies or that cells involved in some phase of antibody production form part of the cellular response around the inoculum and therefore the antigen may not get into contact with the circulating antibody. Though this type of vaccine is not yet ready for general use in man, it holds promise of providing in the future a more useful weapon than the vaccine now available for combating influenzal epidemics.

[4] *J. Immunol.*, 1946, **53**, 75.
[5] Ibid., 1944, **48**, 325.
[6] *J. exp. Med.*, 1944, **80**, 477.

MUSCLE LESIONS IN RHEUMATOID ARTHRITIS

It has long been recognized that the clinical characters of rheumatoid arthritis point to its being a general disease not confined to the joints, and Kent Spender described these features in considerable detail. Among other points he called attention to the fact that muscular atrophy is often an early symptom and may be in advance of, and out of all proportion to, any mischief in the nearest joints. Many authorities regarded this as evidence that the disease had its origin in the central nervous system, but no substantial evidence has been forthcoming to support this view.

Recently, pathological investigation has revealed local lesions in the peripheral nerves (Curtis and Pollard[1]; Freund *et al.*[2]), and this has been followed by the demonstration of similar changes in the muscles themselves. Steiner, Freund, Liechentritt, and Maun[3] examined portions of muscle tissue obtained by biopsy in 9 cases of rheumatoid arthritis and compared them with specimens from 196 controls; they found a condition in the cases of arthritis alone to which they have given the name "nodular polymyositis." The nodules were widely scattered throughout the muscular system without any relation to the joints, and consisted of inflammatory granulomatous tissue differing from the nodules found in other diseases of muscle. While the nodules were sometimes present without degeneration of the muscle fibres, early muscle-fibre degeneration was always combined with inflammatory lesions in the endomysium of the same fibres, and even in cases clinically "burnt out" so far as the joints were concerned there was evidence of this inflammatory process being active in the muscles. The nodules were of the same type as those associated with the nerves and similar to the lesions in synovia and the subcutaneous nodules and entirely different from the nodules of fibrositis. The neuromuscular spindles were never involved, and the muscle lesions did not appear to be associated with the perineuritic lesions of the same character; the walls of adjacent arteries were invaded in a few instances.

Gibson, Kersley, and Desmarais[4] have confirmed these findings, and divide the lesions into two types differing in histological make-up and relation to the blood vessels; both descriptions are well illustrated. In one of their cases eosinophils were found in profusion, and it is suggested that this supports the theory of the aetiology of rheumatism involving anaphylactic hypersensitivity. Their controls, which included some cases of ankylosing spondylitis, were also negative, and a piece of muscle from a case of acute fibrositis showed no inflammatory cell reaction, though, as in the arthritis cases, the muscle fibres exhibited staining deficiency, loss of striation, and an increase in muscle nuclei. These authors suggest that the possibility that the arthritis may be secondary to the involvement of the soft tissues calls for further study. Both investigations furnish an important contribution to our knowledge of the pathology of rheumatoid arthritis.

COMMON COLD RESEARCH UNIT

The Common Cold Research Unit, set up by the Ministry of Health and the Medical Research Council, began work in May, 1946, at the Harvard Hospital, near Salisbury, on the most comprehensive investigation into the common cold yet undertaken in Britain. Volunteers have so far

[1] *Ann. intern. Med.*, 1940, **13**, 2265.
[2] *Amer. J. Path.*, 1942, **18**, 865.
[3] Ibid., 1946, **22**, 103.
[4] *Ann. rheum. Dis.*, 1946, **5**, 131.

been largely drawn from among university students, but they have also included a number of industrial workers and V.A.D. nurses. Volunteers spend ten days with the unit, and by the end of the year 129 had taken part. Many more volunteers are now required, particularly for the periods of mid-January to mid-March, mid-April to mid-June, and mid-October to mid-December. The aim, therefore, is to try to establish a national panel of volunteers. It is stressed that normal individuals of either sex between the ages of 18 and 40 are required. Cases of tuberculosis, chronic catarrh, asthma, hay fever, or sinusitis are obviously not suitable.

Those who are willing to enrol on this national panel and put their services at the disposal of the unit are asked to apply to the Medical Officer, Harvard Hospital, Coombe Road, Salisbury. They will then receive a special application form, full details of the investigation, and dates of forthcoming trials. Trials during the first half of this year for which volunteers are urgently wanted are: Jan. 29–Feb. 8; Feb. 12–Feb. 22; Feb. 26–Mar. 8; Mar. 12–22; Apr. 23–May 3; and May 28–June 7. As volunteers live in pairs during the ten days they spend with the unit, applicants are advised to arrange, so far as possible, to enrol with a friend of the same sex so that both can remain together. Married couples can be accepted. Individual applicants can be accepted if there happens to be spare accommodation, or if they are prepared to share a hut with a partner of the same sex.

The present series of tests, under the general supervision of Dr. C. H. Andrewes, of the National Institute of Medical Research, involves only the intranasal instillation of filtered nasal washings and other material believed to contain the cold virus on which work is proceeding at Hampstead.

PITFALLS OF ADOPTION LAW

Doctors, matrons of nursing homes, and midwives are often asked to help to get a child adopted, either because it is illegitimate or because the family are too poor to be able to keep it. They naturally desire to be as discreet as possible in order to preserve the patient's confidence, and are sometimes able to make private arrangements. It is not generally known that to do so is an offence against the law. In fact, this *Journal* once unwittingly overstepped the boundary by publishing an offer, sent us by a general practitioner, to adopt a child conforming to a given description. The President of the Medical Defence Union, Dr. James Fenton, explained the position in a letter to the *Journal* published on Aug. 5, 1944 (p. 194). He narrated that a member of the Union had attended a patient on the birth of her illegitimate child and had also attended a married woman who had been disappointed by the birth of a stillborn child. The doctor brought the two women together with a view to the adoption of the child by the married woman. The welfare authority of his district pointed out that he was in breach of the Adoption of Children (Regulation) Act, 1939, which provides that, if arrangements are being made for a child under 9 years of age to be placed in the care and possession of a person who is not the child's parent or guardian or near relation, any third party participating in such arrangement must give seven days' notice to the welfare authority before the child is transferred. The Union was able to avert a prosecution of which the consequences might have been serious, for section 7, providing that any individual making arrangements for the adoption of a child under 16 must give notice in writing to the welfare authority, imposes a penalty of six months' imprisonment, a fine of £50, or both. The Act also forbids any body of persons which is not a registered adoption society or a local authority to make or cause to be made any arrangements for the adoption of a child, on pain of a fine up to £200. This was the offence which the B.M.A. would have been held to have committed if the offer of adoption published in the *Journal* had led to an agreement. It is also illegal to make arrangements for children who are British subjects to go abroad with a view to adoption. The General Secretary of the Church of England Moral Welfare Council, to whom we are indebted for the substance of these notes, points out that these prohibitions are imposed in the interests of children and suggests that doctors would be well advised to refer patients who wish to have children adopted to one of the registered adoption societies. These bodies make careful and confidential inquiries on behalf of all concerned and must supervise the welfare of the child until the adoption is legalized.

WESTMORELAND LODGE

Elsewhere in this issue (p. 101) there appears an account of the new venture to which the Royal Medical Benevolent Fund stands committed. Westmoreland Lodge is to be a residence for some of the Fund's beneficiaries, and it will probably be ready for occupation by the early summer. Though until recently the project was known to but a few besides the Committee of Management of the Fund, it has been in contemplation for some time and has been approved by, for instance, the Charities Committee of the British Medical Association. The enterprise itself is evidence of an up-to-date outlook on the part of the Fund's executive, and this gives reasonable grounds for belief that any problems of administration which may arise will be solved. The profession at large may be safely assumed to be in cordial sympathy with this new development. A London surgeon said quite recently, on hearing of the scheme, that previously he had always had to take on trust the efficiency of the management of the Benevolent Fund, and now he was glad to find that his confidence was not misplaced. Dr. Arthur Holdsworth Davis has created for himself an enduring monument. There may be other medical testators able to follow his example.

DELAYED PUBLICATION OF QUARTERLY JOURNALS

We much regret that there has been a delay in the publication of recent issues of the following quarterly journals published by the British Medical Association: *Archives of Disease in Childhood*; *Journal of Neurology, Neurosurgery and Psychiatry*; *British Journal of Industrial Medicine*; *Annals of the Rheumatic Diseases*; *British Heart Journal*.

This delay has been due to no fault of the editors of these journals, but to exceptional difficulties experienced by the printer. At no time since September, 1939, have there been so many obstacles in the path of a publisher. One of the chief causes in the delay of the publication of the above journals has been the inability of the paper mills to supply to the printer the paper on which they are printed. Every possible step is being taken to remedy the unfortunate situation that has arisen, and we can do no more than apologize to editors, authors, and subscribers for the most regrettable delay that has occurred from circumstances over which we have no control.

A special meeting of the Council of the British Medical Association was held on Wednesday, Jan. 15. This meeting was called to receive the final plebiscite results, which appeared in the *Journal* of Jan. 11 at p. 64; to discuss correspondence between the Presidents of the three Royal Colleges and the Minister of Health on the National Health Service Act (p. 66); and to consider the present position.

WESTMORELAND LODGE

BY

HENRY ROBINSON, M.D., D.L.,

Chairman of the House Subcommittee

A few years ago the Committee of Management of the Royal Medical Benevolent Fund discussed a new project, a proposal to start a home for some of their beneficiaries, especially for widows left alone and in distressed circumstances. For reasons valid at that time the idea could not be taken further until the late Dr. Arthur Holdsworth Davis bequeathed his own house, with a substantial endowment fund, to be utilized for precisely such a project. The Fund accepted the trust, only to discover that Dr. Davis's wish was quite frustrated by the conditions set forth in the title deeds of his house, whereby any such use of it was entirely prohibited. The house was thereupon sold, for the Fund felt that the nearest attainment of his wishes open to them was to use the income of the whole legacy in grants for residential treatment in nursing homes, pay-wards, or convalescent homes for such of their beneficiaries as needed relief of that sort.

The progress of the war brought about so much greater a need for accommodation of the kind envisaged by Dr. Davis that three or four years ago the Fund set up a small subcommittee to explore the possibilities afresh. This resulted in a report, accepted and endorsed by the Committee of Management of the Fund, that the establishment of a home was both practicable and highly desirable, but that it would be wise to await the conclusion of the war before any active steps were taken to implement the policy. Eighteen months ago, therefore, the subcommittee set to work to find suitable premises conforming to several specifications suggested in their original report. Many houses both in London and elsewhere were inspected—work in which several members of the Ladies' Guild gave most valuable help. After rejecting a great many properties, the subcommittee decided to advise the purchase of Westmoreland Lodge, 27, Inner Park Road, Wimbledon Common, London, S.W., as coming much closer to the ideals proposed in their report than any other which had been viewed. The Fund acted on this advice and purchased the freehold; possession was obtained on Nov. 1, 1946. Architects had already been consulted as to the alterations that would be necessary; their report was presented by mid-November, and approved with one or two minor amendments. It should be added that before the purchase was concluded permission had already been obtained from both the L.C.C. and the Borough Council for the intended new use of the premises. Assuming that the consent of the Borough Council to the alterations is given, it is hoped that the opening of the house may take place in the early summer of 1947, at latest.

Westmoreland Lodge is a well-built, detached, non-basement, mid-Victorian house in a very quiet, almost semi-rural part of Wimbledon, but only about 300 yards from a 'bus stop on the Wimbledon–Putney route, and therefore within easy reach of both centres for shopping and recreational facilities. It has a long but not very wide garden; in fact the strip of land on which it stands is 140 yards in depth. The rooms are large—some of them so large that they can be subdivided into two—and the plans provide for the accommodation of twelve or more residents, as well as for the Warden (Mrs. Rayner). Every resident will have her own bed-sitting-room, with either gas or electric cooking and warming facilities. It is hoped to install central heating. It is intended that the Warden and her staff will supply one substantial meal at midday, and that the residents will make their own arrangements for their other meals. There is a large room on the ground floor, big enough for a combined dining-room and common-room, with a large glass-enclosed verandah outside for summer use. Extra bathrooms are among the contemplated modernizations, and each resident will have the use of a convenient washing-up place. Two large refrigerators have already been obtained and will be available for the storage of their foodstuffs.

The furniture problem, which promised to present great difficulties, has been much eased by two pieces of good fortune. One is the highly valued gift of a houseful of furniture. The late Miss Wiltshire directed in her will that her trustee should give this to an approved charity—and the trustee was Mr. Underwood, honorary solicitor to the Fund. The other was the discovery by Mr. Pennefather, secretary to the Fund, of a pre-war stock (therefore coupon-free) of small oak cupboards of a kind peculiarly suited for our purpose; they have metal tops on which gas-rings or electric cookers can safely be sited. Carpets may be more difficult to obtain: a few have been purchased second-hand (at high prices), and it is thought that some of the residents may have carpets of their own which they may wish to bring with them. Beds, of which none have yet been bought, bed-linen, blankets, household linen, and table utensils residents are expected to provide for themselves, and difficulty is not apprehended on that score. Glassware, crockery, and furniture for both the dining-room and some of the other rooms are included in the bequest already mentioned. About half the stair-carpet needed is in hand, but more will have to be procured somehow. Curtains will certainly present a difficulty—those for the dining-room were obtained from the previous owner at pretty considerable expense. It will be realized, therefore, that there are several gaps in the equipment of the house—clocks are one such item not so far mentioned.

This brings me to the crux of the matter—finance. The purchase money, £7,000, and the alterations, which will cost a little under £3,000, are being provided out of the bequest of Dr. Holdsworth Davis, but this of course reduces the income of the Fund because the money has hitherto been invested in interest-bearing stocks. The cost of upkeep will be considerable, though no exact estimate of it is possible yet; but the Committee of Management believe that, whatever it may turn out to be, the money will be well spent, and they hope that the profession as a whole will approve the action they have taken in the matter. Should the experiment turn out to be a success, in course of time it may well be that further enterprises of a similar sort will be undertaken; for example, the provision of a hostel for infirm or even bedridden beneficiaries—for at present it is planned to accept at Westmoreland Lodge only candidates who can and will look after themselves, keep their own rooms clean, and cook their own teas and breakfasts.

The accounts of the house will be separately kept by the Royal Medical Benevolent Fund, so that if any reader is disposed to support the project financially his or her donation or subscription can be credited to that account, rather than to the General Fund, if it be so desired. Mrs. M. W. Parry, during 1945, gave a donation of £300 in memory of her late husband, Mr. R. H. Parry, F.R.C.S.Ed., to be set aside towards the establishment of the residential house. The Charities Committee of the British Medical Association has already signified

its approval by recommending to the Council of the Association a special allocation of £200 for Westmoreland Lodge. It is felt that there will be many other well-wishers within the ranks of the profession. Apart from money, the subcommittee will be most grateful for stair-carpets and other amenities indicated in the foregoing description.

It has been decided—I think rightly—to associate the name of Arthur Holdsworth Davis with the plan, and a plaque will in due time be put up in the front hall to commemorate his munificence. Lastly, let me add that anyone who is interested and would like to visit the premises will be cordially welcomed; a telephone message to Mr. Pennefather's office (1, Balliol House, Manor Fields, Putney, London, S.W.15: Putney 6128) is advisable so that a time can be fixed when either he or the Warden may be available. Inner Park Road is about a quarter of a mile from the *Green Man* at the top of Putney Hill, along the road to Wimbledon. I myself will be glad to give any further explanation or information that is asked for, but application for admission should be made direct to Mr. Pennefather.

THE NATIONAL HEALTH SERVICE ACT*

SOME CONSTITUTIONAL AND MEDICAL ISSUES

BY

REGINALD T. PAYNE, M.S., M.D., F.R.C.S.

"This is true Liberty when free born men
Having to advise the public may speak free,
Which he who can, and will, deserv's high praise,
Who neither can nor will, may hold his peace;
What can be juster in a State than this?"
Milton. Motto of *Areopagitica*.

There are two things that are uppermost in our minds at the present time. The first is that we are members of an ancient and a liberal profession; the second, that the National Health Service Act is now law. The immediate decision to be confirmed is whether or not we are to negotiate with the Minister of Health on regulations to be made under the Act. Such regulations would not alter the fundamental principles of the Act though they would affect its details. What is not generally recognized outside the profession is that although there has been a Negotiating Committee in being the Minister has hitherto refused negotiations.

Since the implications of the Act are far wider than their mere application to the medical profession, it is important to return to first principles if we are to define our individual attitude to the Act. I shall therefore approach the matter on two lines: first, from the constitutional aspect, and, secondly, from the medical aspect. In other words, I shall try to answer two questions. How far is a Government Department to be trusted with the powers that the Act confers on the Minister? How far is a monopoly of medicine justified in a democracy? If we answer these questions as citizens who are members of a liberal profession, our duty and responsibility to the community will take us far away from personal or professional considerations, and certainly far away from mere expediency.

The catchwords of the age are "organization and efficiency," but we can achieve these at too great cost to freedom.

Some Constitutional Issues

The essential component parts of the Constitution are the Legislature, the Executive, and the Judiciary. The Legislature makes the laws, the Executive carries them out, and the Judiciary sees that justice is done. Owing to the increase in Parliamentary business, legislation is hurried and much less thoroughly debated than formerly, and it is also increasingly passed in "skeleton" form. This means a greatly lessened Parliamentary control over legislation itself, and little or no control over delegated legislation arising out of the Statutes. It also means that more and more of the work of filling in the framework of Acts is handed over to departmental officials. Few of the resulting regulations and orders are seen by members of the House of Commons, and almost none are debated. Under the National Health Service Act the majority of regulations will not require affirmative resolutions of the House. Delegated legislation is not only beyond effective Parliamentary control, but it is also beyond the power of the Courts. The Executive department thus becomes Legislature, Executive, and Judiciary. This short-circuiting of the Judiciary has been put forward in some quarters as a means of forcing through schemes based on a particular social theory.

1. Delegated Legislation

Acts of Parliament of a "skeleton" or "enabling" type have handed over to the Executive vast powers of making regulations. Such delegated legislation may be by Order in Council or by Departmental Regulations. This type of legislation has a long history, but as a method it has been increasingly used in recent years. During the 1914–18 war there was a flood of delegated legislation. It continued to a lesser extent between the two wars and was further greatly increased as emergency legislation during the recent war. Delegated legislation is constitutionally dangerous since it imposes a strain on the balance between legislative, executive, and judicial activities. By concentrating function in the executive it diminishes the checks of the other two spheres. One of the most criticized features has been the power given to Ministers to override the provisions of a parent Act. Delegated legislation has been subjected to the most scathing criticism of judges, constitutional lawyers, and historians. In 1929 Lord Hewart in his book, *The New Despotism*, condemned the increase in the arbitrary executive powers, and regarded the tendencies as sinister and despotic. Sir John Marriott in 1930, in *The Crisis of English Liberty*, a history of the Stuart Monarchy and the Puritan Revolution, considered the contemporary concentration of executive power a parallel danger to the despotic power of the Stuarts. Dr. C. K. Allen, formerly Professor of Jurisprudence in the University of Oxford, recently expressed similar alarm in his book entitled *Law and Orders*. Furthermore, whenever opportunities have arisen, the Judges of the High Court have always shown themselves the strongest supporters of the citizens' rights against the arbitrary and despotic use of Ministerial powers. In 1929 the Donoughmore Committee was appointed to inquire into Ministerial powers, but most of the recommendations of its report passed into oblivion.

All parties are agreed in theory as to the dangers of delegated legislation, though all use the method during office. Many regulations have to be laid before the House "as soon as may be," but in practice they may be locked away in cupboards in the library and, unless a Member is unusually curious he will have no knowledge of them. Most of the regulations automatically become law after a short period of time. Others can be annulled by prayer. Regulations made as "Provisional Orders" on grounds of urgency escape all Parliamentary control. Recently a Select Committee was set up to examine statutory rules and orders. The unsatisfactory position can be appreciated by examining their third Special Report (Oct. 29, 1946). The Committee complain of the delay in publication and presentation to Parliament, of the tendency to make draft rules appear as if they were the final and valid instruments, of the printing of orders back to back, and of orders consisting of provisions purporting to give retrospective effect to the instrument where the parent statute confers no express authority. They also criticize "five-tier legislation," which by cumulative delegations hands on powers to the great-great-grandchildren of the parent statute.

2. Auricular Consultation of Judges

In order to secure the independence of the Judiciary, the Act of Settlement of 1701 provided that judges could not be removed except on the address of both Houses of Parliament. Previously, from time to time, attempts had been made to tamper with the judges and undermine their independence. James I certainly did this and attempted to secure the judges' determination for the Crown. Sir Edward Coke, the Chief Justice, objected that "such particular auricular taking of opinions was not according to the custom of this realm." Charles I at the time of Ship Money similarly intervened to secure the judges for the Crown.

Lord Hewart, in his book, discusses in detail the most recent case where an attempt was made to establish a system whereby His Majesty's judges would be ordered and required to give

* Being the substance of some remarks made at a special Meeting of Fellows of the Royal College of Surgeons of England on Nov. 29, 1946.

their opinions beforehand. This proposal was contained in the Rating and Valuation Bill, 1928, and the department concerned was the Ministry of Health. The dangers of such a system are obvious, and the detailed comments during the committee stage in the House of Lords gradually revealed the nature of the attack that was being made on the Constitution. Eventually the Minister of Health dropped the sinister clause.

3. Quasi-Judicial Bodies

Delegated legislation not only renders the Courts increasingly powerless, but statutory tribunals of a quasi-judicial nature are set up either semi-autonomously or within Government Departments to administer what I may call rough justice. Such tribunals exist in connexion with medicine, agriculture, rent, etc., and others have been appointed under the National Health Service Act. The essential characteristics of such tribunals are that their composition is not necessarily based wholly or partly on those trained in the law, witnesses are not necessarily on oath, the taking of evidence does not follow the usual court rules, the proceedings may be in camera, the Press are at times excluded, and the right of appeal may be absent. Such tribunals are outside the main legal processes of the country. They thus fit in with delegated legislation and make executive rule much more complete. The dangers of these tribunals have been repeatedly stressed, and in an article in the *Spectator* of Oct. 6, 1944, Sir Henry Slesser pointed out that since the decisions of the tribunals are to be "final and conclusive for all purposes" there has been a serious invasion of the rights of the individual.

4. General Medical Council

The General Medical Council is a quasi-judicial tribunal. Its penal activities have lately come under serious criticism for the reasons set out above. Attempts are now being made to secure that there shall be an appeal to the Courts from its decisions. It is therefore ironical that the Minister of Health should now secure to himself powers to prevent appeal to the Courts from the decisions of his tribunal. It is not generally realized that the General Medical Council is under the authority of the Privy Council. What will be the position of the Council's penal activities when all or most of the Council are State servants?

5. The National Health Service Act Tribunal

This Tribunal is a Government tribunal. The relevant words of the Act are as follows:

"The Tribunal, on receiving representations from an Executive Council, shall, and in every other case may, inquire into the case and, if they are of the opinion that the continued inclusion of the said person in any list to which the representations relate would be prejudicial to the efficiency of the said services, shall direct that his name be removed from that list, and may also, if they think fit, direct that his name be removed from, or not be included in, any corresponding list, kept by any other Executive Council under this Part of this Act."

The decision of the Minister's disciplinary tribunal is final. There is no appeal from this quasi-judicial body. The offending doctor may have been justifiably dismissed, or he may have infringed some minor Ministerial regulation, or he may not have carried out treatment in accordance with some Ministry of Health circular, or his political or private views may not coincide with those in authority, and the Ministry decides to terminate his employment. From this there is no redress and no appeal. The evils of the penal system of the General Medical Council will be perpetuated and aggravated by this Government tribunal.

6. Rendering the Courts Powerless

With the mounting volume of delegated legislation and the increase in judicial powers granted to Executive Departments the citizen finds it increasingly difficult to secure redress in the Courts. The various quasi-judicial bodies also limit appeal to the Courts. The Executive thus becomes prosecutor, judge, and jury in its own case, and the citizen is rendered helpless. Finally, time after time, Executive Departments, not content with their existing powers, have acted in the most arbitrary fashion and taken the law into their own hands. Fortunately the Courts have proved the citizens' stoutest defenders in these cases of *ultra vires*. The seriousness of the situation has been and still is being stressed by the judges and by constitutional writers.

7. The Crown Proceedings Bill

The individual is at a grave disadvantage in claims against the Crown. An action which would be successful against another citizen may fail when the Crown is litigant. Owing to the unfairness of the position a committee was appointed in 1921 to inquire into the matter, and reported in 1927. Subsequently a draft of the Crown Proceedings Bill was put forward with the object of giving equality to the individual in claims against the Crown. This Bill has had the support of all political parties, of the judges, and of the Bar. Nevertheless there have been all sorts of delays, and the Bill has never been proceeded with. The rapid extension of nationalization and the mounting numbers of Crown servants in the community make it a matter of elementary justice to secure that the Crown has no special privileges as an employer in the eyes of the law.

Recent legal decisions stress the even greater urgency of the matter. Lord Justice Scott, in summing up an action in which the Crown was involved—Royston *v.* Cavey (*The Times Law Report*, Nov. 12, 1946)—is reported as follows:

"With the complexity of modern business carried on by Government Departments and the great increase in commercial concerns owned by the Government, it was a crying evil that legislation to remedy the position should not be passed by Parliament. He wished to express his opinion as strongly as possible that it would be a crying wrong if the necessary legislation was not introduced at an early date."

But in so important a matter affecting the citizen's legal rights the Government "can hold out no hope of early legislation." Thus nationalization robs the citizen of legal remedies.

8. Certification

A consideration of certification is included here, as the subject has been made a political one. Any doctor who has had experience of practice knows the problems presented by certification. We are faced with human material and not abstract propositions, and in issuing certificates the doctor does his utmost to serve his calling justly. In the latter part of the debate on the National Health Service Bill in the House of Lords the Lord Chancellor spoke as follows: "No one could have been, as I have been, Minister of National Insurance without realizing that the success or failure of all our schemes depends in a very large measure on our getting satisfactory certification. If we are going to have lax—still more, dishonest—certification, then all our schemes are going to break down on that rock." Certification is thus the crux of the problem. The Government is going to control the doctor, because if the doctor were not controlled he might be "lax or dishonest," or, worse still, he might treat his patients with kindness and humanity. The doctor is to be coerced because as a humanist he is not to be trusted. And who defines "satisfactory certification"? The Minister of Health and his officials. Perhaps when a "production drive" is in progress the Minister of Labour may arrange a further tightening up of certification. The Lord Chancellor's statement is a damning admission of the Government's intention.

In a letter to the *Journal* of Dec. 4, 1943, I commented on the use of *agents provocateurs* in attempts to trap a medical practitioner into giving certificates. In the case in question three police spies admitted they had acted on instructions from the Criminal Investigation Department, that they had been instructed to give false information and to feign sickness to the doctor, and that they had also been told what to say. All these facts were admitted by the legal representative of the Director of Public Prosecutions. The charges against the doctor were dismissed and costs awarded against the prosecution. The magistrate's comments on this case left no doubt as to the importance he attached to honesty in the relation between patient and doctor. If suspicion in connexion with certification is to be the underlying principle governing the attitude of the authorities then it will be a sad day for Medicine. The fact that a few men are lax or dishonest is an insufficient reason for putting the profession in chains or for justifying the employment of spies from Government Departments to see how we are doing our work.

9. The Closed Shop

The significance of the recent Willesden episode has not been lost upon the profession. If a local authority can issue

instructions ordering all its employees, including its nurses and doctors, to join their appropriate trade unions or professional organizations, it leaves little to the imagination to realize the coercive powers in the hands of the Minister of Health. Since the recent repeal of the Trades Disputes Act, 1927, more and more local authorities have made union membership a condition of employment.

The first condition of employment is the production of a union ticket. The individual trade union is affiliated to the Trades Union Congress, and a contribution to the political funds of the Labour Party is automatically secured unless the individual member contracts out, and contracting out may be a matter of grave difficulty in certain communities.

Doctors therefore have not been slow to realize the implications of the Willesden episode. We will not be a party to any proceedings which make our activities part of any "closed shop" organization. An organization where union membership is a primary condition of employment and that union is linked to one political party rapidly approaches the one-party State. This is not merely a question of which political party is involved. So long as we remain a free and liberal profession we will have no dealings of this type.

10. THE MINISTRY OF HEALTH

The record of the Ministry of Health in constitutional matters is such that, if aware of the facts, no citizen would willingly concede any increase in powers to the Ministry, and no doctor would willingly hand over either the sick public or the medical profession to the sole charge of such a Department. What is the evidence that has led constitutional writers to criticize the activities of the Ministry of Health beyond all other Ministries?

A. It has constantly used the method of "skeleton" legislation, leaving the substance of Acts to be determined by departmental regulations.

B. It was one of the Departments most responsible for the huge increase in delegated legislation between the two wars.

C. It has constantly used the procedure of "Provisional Rules" to enforce its decision on grounds of urgency. Such regulations become valid immediately they are made, and may remain in force for years though unconfirmed by Parliament. More than half the regulations made by the Ministry of Health under the Local Government Act of 1929 were of this type.

D. It has used in its legislation the so-called "Henry VIII clause," which gives an executive authority "power to amend the parent Act, or (usually) *any other Act*, in order to bring the parent Act into 'full operation.'" By extension it enables the Minister "if any difficulty arises," in bringing an Act into operation, to "remove the difficulty" by Order. This obnoxious and arbitrary type of legislation was used under the National Health Insurance Act, 1911, the Rating and Valuation Bill, 1925, and the Local Government Act, 1929.

E. The Ministry of Health was the Government Department which most recently attempted to tamper with the independence of the Judiciary. This occurred in connexion with the notorious Clause 4 of the Rating and Valuation Bill, 1928. This clause would have allowed the Minister to submit doubtful points of law to the Courts and, by being armed with anticipatory opinions, would have denied justice to litigants. The clause was attacked in the House of Lords as a most sinister attempt at Executive encroachment on the independence of the Judiciary.

F. The Ministry of Health is already choked with quasi-judicial functions. These include the hearing of disputes in connexion with National Health Insurance, Old Age Pensions, Blind Persons, etc. The even less than quasi-judicial ministerial local inquiries have come to be regarded as mere farces.

G. The Tribunal of the Ministry of Health under the National Health Service Act will be an additional quasi-judicial function. It will not be a legal tribunal, it will merely be a tribunal for the exercise of the Minister's administrative discretion.

H. For the foregoing reasons the Ministry of Health has been the Executive Department where there has been the greatest concentration and confusion of legislative, executive, and judicial functions. As its powers have increased, so has it been able more and more to prevent appeal to the Courts.

One of the most recent examples of the activities of this Ministry is described in *The Times Law Report* of Jan. 26, 1944, in an action—Minister of Health *v.* Bellotti and Another. The following is from *The Times* summary of the Master of the Rolls's judgment:

"He could not leave the case without saying this. Where persons were to be ejected from premises which they had lawfully occupied, the general expectation would be that recourse would be had to the Courts rather than to the high-handed method of ejectment by force. That was particularly applicable to a Government Department, which one would expect to act with some sense of dignity.

"But the Ministry concerned here, having failed to secure obedience to its rules, instead of coming to the Courts, proceeded, with the help of four porters, to try to drag the respondents from the flats. That having failed, the next step appeared to have been to withdraw the respondents' meal-tickets, and in fact to endeavour to starve these people out.

"He did not think that that particular incident was one which those responsible for it would look back on with any sense of self-congratulation, and it was to be hoped that that type of action would not be regarded as a precedent. He would say no more except that he did not like departing from the strict path when delivering judgment, to administer rebukes, but he did it because it was very relevant on the question of costs."

This is the Ministry which is to be entrusted with entire charge of the sick public and full control of the medical profession!

Some Medical Issues

The National Health Service creates a monopoly of Medicine in regard to hospital and consulting work and makes general practitioners subject to a measure of State control hitherto unknown. It is an Act for the better control of doctors and their patients.

1. The Patient.—Under the Act the patient can only be seen at hospital by a consultant who is a State employee. Even if the patient goes to the part-time consultant privately the latter will still be a State servant. There can be no really independent opinion for the patient, and independent opinions in Medicine are needed and will always be needed. All consultants see cases where it is essential to the patient's best interest to have an opinion absolutely independent of any local authority, trade union, or Government Department. The general practitioner is also placed under a grave disability in connexion with his patient's welfare. Hitherto the conscientious doctor has been able to advise his patient to go to this or that hospital or to this or that consultant, and he has chosen the hospital or consultant in relation to the special problems presented by his patient. That freedom of the general practitioner to do his best for the patient will now be hedged by Ministerial regulations or directives. In future the doctor will have to send his patient to the appropriate officer, at the appropriate hospital in the appropriate region. The State controls the relationship between the patient and the consultant, and the general practitioner must give up his position as counsellor and adviser.

2. The Consultant.—The hospitals are in the hands of the Minister and are controlled by the Minister. The hospital staffs are restricted to those in the Service. The Minister controls all the beds and has refused to negotiate on this. The consultant therefore has the choice of joining the Service or being liquidated. Mr. Bevan does not conscript or direct the consultant but he produces a "Coercion Act" which says "Join or be destroyed." The voluntary hospitals have not contested the Act in the way that might have been expected, and they seem to have forgotten the living principles which founded them.

3. Patient and Consultant.—Under the Act all hospitals become State hospitals, and the definition of a "hospital" is so wide as to include any institution for the reception of the sick. If the consultant is to have hospital beds he must therefore have them within the State service. Mr. Bevan's recent sop to consultants should deceive no one. The independence of the honorary consultant within the State service must be shortlived, and the logic of the situation must force all consultants into the salaried service. The patient will then have no choice of seeing a consultant outside the service since independent consulting work can be carried on only from independent institutions. The elimination of free association of doctors and patients is a doctrinaire restriction of the freedom of the public and the independence of the doctors.

4. The Medical Student.—How will the Act affect the type of students? Hitherto Medicine has attracted a variety of types. That variety has been determined by the variety of careers that Medicine offered. In the future that variety must

be sacrificed, and will be limited to men and women who are content to work within the framework of a rigid Service. There will be less scope for individual initiative, and less for purely personal considerations. Variety must be sacrificed to uniformity. The ambitious doctor of the future will be the administrative climber and not the scientist, humanist, or artist. The only serious criticism of the medical student type has been that owing to the cost of the training it has been impossible for youths from the poorest homes to take up Medicine. This is certainly true. But it is also true that, although men from humble homes have made excellent doctors, the poorest home is not a real background for the future doctor. But in the future the student is to be State-aided, State-conditioned, and rendered servile, docile, and mobile.

5. The Royal College of Surgeons of England and Other Medical Corporations.—What will be the position of the Council of the Royal College of Surgeons in ten years' time? By that time half the Council will be civil servants in all but name, and the other half will be Government pensioners. What will have happened to the much-prized independence and prestige of the College then? It will no longer be the Royal College of Surgeons, it will be the Royal College of Surgical Serfs.

What will be true of the Royal College of Surgeons will be true of every medical corporation. The Fellows forming the respective Councils are invariably consultants and as such will be Government employees who must carry out the instructions and wishes of their master, the Minister of Health. The Minister will not be their immediate master, but he is in a position to exercise his authority. He can declare that the corporations' examinations are no longer recognized by the State, or that the higher examinations are no longer necessary in a world of "graded specialists." And by so doing he can at a stroke of the pen destroy both prestige and income. And why should not the Minister do these things by Departmental regulation? There is certainly nothing to prevent him if we acquiesce in working his Act. The destruction of the independence of the medical corporations means their destruction as expert medical bodies.

6. The Central Health Services Council.—This Council, which is to advise the Minister of Health, looks formidable enough on paper. Six members are *ex officio*, and the other thirty-five are appointed by the Minister. But will it be either formidable or disinterested when most of its members are State servants or State pensioners, and the Minister of Health is their employer? The Presidents of the Royal College of Surgeons of England, of the Royal College of Physicians, London, and of the Royal College of Obstetricians and Gynaecologists may now be impressive figures, but in ten years' time their respective Colleges may have lost all their prestige and most of their power, so that their respective Presidents' real capacity to offer independent and expert advice to the Minister will not be worth a fig. It will be more important to keep on the right side of the Minister and his officials than to offer independent advice or criticism. It will be more important to know your Minister than to know your medicine. It is not without significance that the Minister is enabled to suppress, either in whole or in part, the publishing of the Council's Annual Report to Parliament "if the public interest should demand it." Who is to decide the matter of public interest? The public or Parliament? Neither; the Minister. Such a proviso at the centre of the Health Service hands it over at once to the possibilities of obscurantism, dishonesty, and jobbery.

7. The Scientist.—What will be the position of the doctor as a scientist under the Act? Will every publication of every medical man employed in the Service have to pass the official scrutiny of the Minister of Health's officials? Will the right to publish be taken from the doctor and be dependent on the whim of some medical official? Will the real test no longer be scientific or clinical interest or advance, but the furtherance of official policy or a desire to hoodwink the public? Will the publications department of the Ministry have an eye on possible repercussions on the Treasury? Will the doctors' reports be doctored before being published, and will the obedient official doctor get preference over the less acquiescent one?

These are not merely theoretical matters. In the early part of the recent war I was engaged in carrying out some research in connexion with peptic ulceration. At only one hospital was I asked to suppress a piece of evidence. That occurred at a hospital directly under a Government Department. In that hospital I asked one of the senior medical officers if there was any statistical evidence that disease X had any connexion with peptic ulceration. I was told that there was definite statistical evidence but that under no circumstances must I mention the fact, or claims might arise and the Treasury would object. Scientific medical facts are suppressed because their publication might be inconvenient. Think of the endless possibilities under the Health Service Act for the suppression of scientific facts in the interests of official policy or Treasury economy. But doctors in this country are humanists first and scientists second, and the humanist may prove a harder nut to crack than the scientist.

Conclusion

The National Health Service Act is symptomatic. It takes away the personal responsibility of patients and doctors and substitutes the coercive activities of the Minister of Health and his officials. In view of the constitutional and medical implications of the Act, what evidence is there that the doctor should lift a finger to assist in implementing its provisions? What evidence is there that would justify our handing our patients and the medical profession into the keeping of such a despotic Executive Department as the Ministry of Health with its unhealthy constitutional record? History does not support the view that the State can be regarded as a "kind nanny" where the interests of citizens are concerned, and Medicine has duties and obligations to the community which are not compatible with mere Departmental status. What evidence is there that the health services will even be improved? The fundamental feature of this Bill is to transfer all real power to the Minister. If the Bill is operated no patient or doctor will ever feel safe from interference by some Ministerial edict or regulation, and no independent institution connected with Medicine will feel safe from interference, expropriation, or dissolution. The Minister's spies will be everywhere and suspicion and intrigue will rule. "Power corrupts and absolute power corrupts absolutely." Lord Acton's words are as true to-day as when they were written. The medical profession is still a free and independent one, and it is our duty to assert our democratic rights and those of the community at large against the encroachments of the Executive.

I owe allegiance to no political party. As a liberal I am alarmed at the destruction of individual and personal freedom and the substitution of the coercive power of the State. The present constitutional crisis of liberty is comparable to that of the seventeenth century. Then it was the attempt of the king to become a tyrannical power and overrule Parliament, complicated by attempts at religious uniformity. Now it is the weakening of Parliamentary control and the concentration of power in the hands of the Executive.

The community is not coextensive with the State. The democratic community is built up of all the various individuals with differing needs, hopes, and capacities. The modern State is a central organization which attempts to establish a central philosophy for its citizens. So that when Mr. Morrison talks of "the design for corporate living, informed by a conscious philosophy" (*The Times*, Dec. 17, 1945), we know that he and his friends are prescribing their philosophy for the community. Such philosophy uses men as means and not ends. It is the philosophy of infallibility in Church, State, or party. It obliterates the individual, the spontaneous and the native forces of democracy, and substitutes central direction and uniformity.

No Government or political party in this country dare attempt State uniformity in either religion or education. Religious toleration of minorities was established two hundred years ago. Education has repeatedly proved a thorny problem for statesmen and administrators, and the recent Education Act did not impose a State monopoly. But the doctors, alas, are easy prey. They are good-natured and overworked, and their work in a social service has been exploited by all political parties. Meanwhile, voices are being raised that other callings must be nationalized and made free for all. State-sponsored free-law-for-all may have some advantages, but it has grave dangers.

In the face of the spiritual and political tyranny of to-day, we shall serve the community best by standing by our essential freedoms. Do not sell that birthright for a mess of pottage. Do not exchange that freedom for pay and a pension. Do not give up the right of association either as members of the public or as doctors. Do not become gagged Government functionaries with minds in cold storage. Health organization and even health itself can be bought at too great a cost to freedom. And what evidence is there that health will be gained? Freedom and liberty are conditions of health and conditions which allow of constant change and constant adaptation. Coercion and the centralization of power mean sudden change and then stagnation. The analogy of 1912 is utterly false. At that time Parliament was alive, the Executive had not become a tyranny, and the State was not regimenting its citizens in every sphere of life.

We are members of a free and liberal profession. I want that freedom to continue as one of the freedoms of a democratic community. As healers of the sick, we shall continue to give our best if free from State coercion.

I am particularly indebted to the following sources:

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INCREASE IN CAPITATION FEE

The following statement on the current capitation fee has been issued from the Ministry of Health. A report of the special meeting held on Jan. 8 by the Insurance Acts Committee to consider the Minister of Health's proposal to raise the capitation fee appears on p. 5 of the Supplement this week.

An agreement has now been reached between the Minister of Health and the Insurance Acts Committee of the B.M.A. on the application of the Spens Report to the current capitation fee under the existing National Health Insurance scheme. Mr. Bevan has proposed that the present capitation fee of 12s. 6d. should be increased to 15s. 6d., with effect from Jan. 1, 1946, and that there should in addition be an increase in the special payments made to rural practitioners.

In making this offer the Minister has made it clear that remuneration under the new National Health Service will be a matter for negotiation with the medical profession. Some of the factors on which the 15s. 6d. is based will, in his view, have a bearing on the negotiations for the remuneration in the new Service, which, it is agreed, will be on a higher level than the remuneration now settled for health insurance. The Insurance Acts Committee of the B.M.A., in accepting the offer, have stated that they have done so without prejudice to the assessment of remuneration in any future service.

RELEASE FROM THE FORCES

The Central Medical War Committee is informed that medical officers in the following age-service groups are being released during the first three months of 1947:

	January	February	March
Royal Navy	57	58	59
Army:			
(a) General duty officers ..	54	55	56
(b) Specialists	42	43	44
Royal Air Force	54–56	—	57

Reports of Societies

BRITISH ORTHOPAEDIC ASSOCIATION

The Annual Meeting of the British Orthopaedic Association, held in London on Oct. 18 and 19, under the presidency of Mr. GEORGE PERKINS, opened with a discussion on "Fractures of the Os Calcis."

Mr. N. W. ROBERTS and Mr. W. SAYLE CREER had each followed up some scores of cases over several years and had independently reached similar conclusions concerning compression fractures involving the subastragaloid (subtalar) joint; namely, that an incapacity period of about a year in cases treated by reduction and immobilization was approximately halved in cases treated by early movement. More than three-quarters of the patients returned ultimately to full work in their old occupations, and the proportion was not materially influenced by the method of treatment adopted. Mr. W. GISSANE, nevertheless, considered reduction important, and showed a film illustrating its performance and maintenance with a sagittal os calcis pin. Mr. K. H. PRIDIE demonstrated some patients, including a policeman, who showed extremely good function following excision of the os calcis—an operation to be reserved for the most severely affected.

In his presidential address, "Rest versus Activity in the Treatment of a Fracture," Mr. GEORGE PERKINS confined his remarks to fractures not directly involving joints. Activity was of importance in preserving the extensibility of muscle, thereby preventing stiffness. If both fragments in a fracture bore muscles, these would look after immobilization, and the sole function of the limited splinting necessary was the preservation of alignment. Failing this condition (as in fractures of the femoral neck, medial malleolus, and scaphoid), splinting was necessary not merely for alignment but also for immobilization. Such splinting must be prolonged, uninterrupted, rigid, and extensive; consequently it impaired function, and internal fixation was often preferable.

Prof. E. SORREL presented a paper on the treatment of tuberculous arthritis, in which the results of some usual and unusual extra-articular arthrodeses were illustrated. He strongly advocated arthrodesis as a final stage of treatment, deferred, however, until active disease was at an end.

Prof. H. J. SEDDON showed a film of preliminary work carried out with Dr. A. E. BARCLAY on the cineradiography of joint movements. Mr. K. I. NISSEN gave a comprehensive account of Morton's metatarsalgia, with a clinical and pathological description of 13 cases in which he had excised the fibromatous thickening first described by L. O. Betts of Adelaide. He had carried out a follow-up of three years and more. Mr. I. LAWSON DICK discussed the late results of iliac bone transplantation, and Mr. L. GILLIS showed a film on amputations near the elbow-joint.

At the General Meeting Mr. S. A. S. MALKIN was elected president for 1948–9, and Mr. F. G. Allan and Mr. E. A. Nicoll were elected to the Executive Committee.

SOCIAL SERVICE AND THE HEALTH ACT

The British Federation of Social Workers in collaboration with the British Council for Rehabilitation arranged an all-day conference of social workers on Dec. 7 at the Royal College of Nursing to discuss the new situation created by the National Health Service Act. Mr. ALEXANDER FARQUHARSON presided.

Alderman C. W. KEY, Parliamentary Secretary to the Ministry of Health, in a brief exposition of the Act, said that it was comparatively easy to put into the words of a statute the steps it was desired to take in the curative field, but prevention and rehabilitation were more indefinite and therefore more difficult to express in black and white. Yet this indefiniteness might be an advantage, for if the functions of social workers were closely set out in the Act and then in a few years' time some new development came forward it would be unfortunate if, because they were bound by the Act, they were prevented from using their experience and skill. He went on to say that the fact that the Minister would own the hospitals would

not mean a stereotyped service; from one point of view the Minister's ownership was unimportant, for he had no intention of administering them, and there would be a chain of administrative agencies down to the committee of the individual hospital. One function at present exercised by many hospital almoners—that of assessing a patient's ability to pay—would cease altogether, but many more tasks would open out, including liaison between the almoner's own hospital and the other hospitals and health services of the region.

One of the principal functions of local authorities under the Act would be the provision of health centres. There would be plenty of room for variation and experiment in this direction. Emphasis would be laid on the social and educational functions of these centres. In the family doctor service there was a place, though a less definite and extensive one, for the social workers. "We want the doctor to do a lot more than just cure the immediate ailments of his patients. I hope it is true to say that the good general practitioner recognizes more and more the need for the appraisement of the whole social background of his patient and the need for help beyond his own scope in getting things straightened out." He added that the National Health Service Act was only one part of the Government's programme for the reconstruction of social services. With it would go fresh legislation to break up the old Poor Law and to establish welfare services for children and the aged.

Lady CYNTHIA COLVILLE took up a point made by Mr. Key that it would be the "duty" of the health visitor to go into the home. Hitherto, she thought, the success of the health visitor had resided in the permissive character of her visits. If now she was to have a "right" to go into the homes it might undermine the value of her work. Mr. KEY replied that the "duty" was one laid on the local authority to provide a health visitor service; it would still be at the option of any person to accept the service or not. Miss MACDONALD said that the almoner would now for the first time be free to exercise her true function as a social worker. Patients had hitherto looked on the almoner only as "the lady who collects the H.S.A. vouchers."

The Social Worker and Industrial Health

Dr. H. F. CHARD opened the second session with a description of the various branches of industrial medicine. A personal letter conveying the doctor's recommendations was the best medium for reports on patients who were returned from the hospital to the factory.

Mr. C. E. A. BEDWELL said that if in theory the family practitioner was the backbone of the Medical Service it was as well to make him so in fact. The factory medical officer must be subordinate to the family doctor. Documents from the hospital should be sent not to the factory medical officer directly but via the family doctor, whose responsibility it was to provide such information as was necessary for the factory.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY

Obliteration of Cavities in Pulmonary Tuberculosis

On Nov. 14 the medical and surgical aspects of collapse therapy were discussed by Dr. C. J. FULLER and Mr. ALAN GAIRDNER.

Dr. Fuller said that lesions in the lung were so commonly apical because inhaled bacteria gravitated into sub-apical branches of the upper bronchi. The thorax might be regarded as a semi-rigid cylinder with the diaphragm acting as a piston. The object of collapse therapy in pulmonary tuberculosis was to rest the lung without putting the patient to bed. A subject with a totally or partially collapsed lung was often able to go on doing sedentary work, and, except in advanced cases, temporary artificial pneumothorax was a method of choice for each.

Mr. Gairdner pointed out that though some tuberculous cavities closed spontaneously, others did not, especially if filled with pus. Surgical intervention brought about concentric collapse of the cavity, but a free pleura was necessary so that relaxation could be complete in all directions. If there were adhesions to be cut thoracoscopy was called for; if there were cavities low down in the lung phrenic avulsion might be necessary. Thoracoplasty might be more widely employed in afebrile "good chronics" with a unilateral lesion and cavitation, in which some attempt at healing had occurred; and in unilateral cases which were afebrile and going downhill, especially if pus-filled cavities were present.

Chemotherapy

On Dec. 5 Sir LIONEL WHITBY discussed the present position of the sulphonamides in relation to antibiotics. It was not always easy to choose the most appropriate sulphonamide in any given case. The original prontosil, discovered in 1935, was merely sulphanilamide in combination with an inactive red dye and was found to be effective against most of the Gram-positive pyogenic organisms except the pneumococci and staphylococci. At least 5,000 compounds had been synthesized subsequently in an attempt to improve upon the original substance. Unless it was to be used against the pneumococcus or staphylococcus sulphanilamide was as effective and cheap as any other compound. Sulphathiazole had to be given four-hourly, sulphadiazine six-hourly, and sulphamerazine eight-hourly if an effective blood concentration was to be maintained. Sulphathiazole in macrocrystalline form was useful for local application.

All these drugs acted by inhibiting the multiplication of bacteria, probably because they were "mistaken" for *p*-aminobenzoic acid, the natural "food" of pyogenic organisms. They should be given as early as possible in an infection and used prophylactically whenever possible. It must be remembered that pus contained *p*-aminobenzoic acid, so that once pus formed sulphonamides were useless. Sulphonamides acted quickly and, if given in proper concentration and without result within from seven to ten days, their use should be abandoned. It was of no use changing to another sulphonamide. Oral administration was the method of choice. When applied locally these drugs were absorbed into the blood stream.

Complications of chemotherapy were vomiting, cyanosis, leucopenia, haemolytic anaemia, haematuria, anuria, and skin sensitization. As an increasing proportion of the population received treatment with sulphonamides sensitization was becoming commoner. Drug fever and skin rashes might occur together. Rashes followed local application, which should never be continued for longer than five days at a time. Intractable dermatitis and photosensitivity were serious complications.

Penicillin had replaced the sulphonamides in the treatment of many, but not all, diseases. It was useless, for example, against such Gram-negative organisms as *E. coli*. Sulphonamides therefore still had a place in the treatment of urinary tract infections, where they were concentrated in the kidney about 50 times and so need not be given in large doses but could be used for long periods. Sulphasuxidine was probably the most effective drug at present against Sonne dysentery. Penicillin powder was taking the place of sulphonamides for local application, but mixed powders were of doubtful efficacy. Penicillin by mouth was useless. It was easily destroyed by acids, alkalis, synthetic rubber, or by contamination with airborne organisms, and it was very hygroscopic and thus easily contaminated and rendered impotent. Penicillin was suitable for intramuscular and intrathecal administration, but if used intravenously was apt to cause local venous thrombosis.

Streptomycin, the latest of the antibiotics, was highly active against Gram-negative organisms, and it also appeared to act against the tubercle bacillus, especially in acute forms of the infection. In contrast to penicillin it produced toxic symptoms with overdosage and was probably not the last word in the treatment of tuberculosis. Streptomycin acted against *Pyocyaneus* and *Proteus*, but was less effective against the typhoid and *Salmonella* groups.

At a meeting of the Chelsea Clinical Society, held on Dec. 10, with the president, Dr. Ronald Jarman, in the chair, there was a discussion on "Plastics in Surgery and Medicine" opened by Dr. Stanley Leader, followed by Mr. Robert Cutler, who dealt with the dental applications of this material. Many specimens and quite original uses of plastics were shown, with emphasis on the need for correct selection of the type for any given purpose. Other speakers included Mr. N. Eckhoff, Dr. Desmond MacManus, Dr. Niall MacManus, and Dr. Langdon Lloyd, to whom Dr. Leader replied.

Correspondence

The Presidents and Mr. Bevan

SIR,—It is doubtful whether much notice should be taken of Press opinion on the result of the plebiscite, for much of it has been unsound and contrary opinions have clearly cancelled themselves out. It is much more important for our profession to know that we can expect little help from any of the political parties. Our voting strength is negligible, and politicians will neglect our interests to obtain credit either for starting or for not opposing the National Health Service.

The present position is one of great interest, for the Government have adopted the method of imposing a "Diktat" upon key members of the community, which has quite naturally provoked a strong protest. It reflects great credit upon our profession that political considerations have found no expression in our reaction to the new Act. Our purpose has surely been to obtain the best possible medical service for the individual members of the State. Refusal to negotiate was the only course open to us, and I hope that the medical profession will stand firm and wait until the next move is made by the Government.

The Act contains so many bad features that I doubt whether it would operate successfully even if it had the full co-operation of the medical profession. We must avoid, above all things, being placed in the difficult strategic position when we as a profession would be blamed for defects in an Act for which we are not responsible.

The correspondence between the Presidents of the three Royal Colleges and the Ministry of Health has caused dismay. However good their intentions, their action can only split the profession, for some of us will feel that we owe loyalty to the Royal Colleges, while others, who believe in democracy, will stand by the machinery of the British Medical Association.—I am, etc.,

London, W.1. WILFRED SHAW.

National Health Service Act

SIR,—In conversation with doctors and laymen certain points in relation to the National Health Service Act have become obvious. A frequently expressed question is: "Why do the doctors not produce an alternative?" To that the only reply is that the Medical Planning Commission's alternative, although inadequate, was produced and has (despite *The Times* of Jan. 6, 1947) been largely ignored. Had we taken the stand that to produce a good national medical service the present Act is unnecessary, since financial support is all that is required to develop the medical services of this country to an adequate degree, we should have had a very much greater public and parliamentary support; for the control of the purse-strings is sufficient.

Another question is: "Why do you not concentrate on your strongest point, that the medical profession is to be the only body in the community to be deprived of the right of legal appeal?" This requires no amplification.

The last point—and here we have failed lamentably in presenting our case—is that we did not in the "Principles" emphasize sufficiently the fact that our aim is the provision of an adequate medical service available to all who need it irrespective of financial capacity. This last it is not too late to remedy.—I am, etc.,

Southsea, Hants. NIGEL CRIDLAND.

SIR,—At a meeting at B.M.A. House early in 1946, the subject of discussion being the National Health Service Bill, we were advised by Dr. Hill to put our case before the public. I ventured to ask how it was proposed this should be done and received a reply which at the time did not seem altogether satisfactory, but having myself no satisfactory suggestion to offer I did not pursue the subject.

In the end pamphlets were printed by the thousand and lay, I fear, for the most part unread on the waiting-room tables. Some letters were written to a far from friendly Press, and in the end the Bill became an Act without any effective opposition. A proportion of the Press is definitely hostile to the views of the majority of the profession, ascertained by the recent plebiscite; the rest is lukewarm in its sympathy. A fortnight ago I heard denounced as failing in Christianity those doctors who decided not to co-operate in working the National Health Service Act.

Obviously our methods of approaching the public are at fault, and the difficulties facing us now the Bill has become an Act are infinitely greater. How is the curtain between the medical profession and the public to be raised? It is of little use meeting together and urging one another to do this or that. Unless we get the support of the public we can do little. Surely what are required are meetings open to the public, to whom we can explain our case, prepared to receive some hard knocks, and even to hear some unpleasant home truths. This is not an original idea, for at the beginning of the campaign some far-seeing Divisions put the plan into practice, but it was not widely adopted.

The public, having the Act explained to it with all its implications, may yet be in favour of the Act, but the small amount of space devoted to the Bill by some of our leading daily papers, run by, first of all, business men and only secondly idealists, shows that these men felt their public were not interested and were content to remain ignorant. It is this apathy and ignorance we must strive to dispel if we hope to bring our campaign to a successful conclusion.—I am, etc.,

London, W.8. HAROLD H. SANGUINETTI.

SIR,—Owing to the great courtesy shown by you in sending me the *B.M.J.* during the year (in spite of my not having paid my subscriptions since 1941, owing to having been interned as a prisoner in Siam, and still having no assets to pay them with) I have been able to visualize the present conditions and anxiety regarding the future of every member of your Association in the United Kingdom (is it really united?). Though I have lived for the past forty-two years in Siam I feel that perhaps for that very reason I possibly may be able to see the whole wood and not confine my vision to an odd tree or two, as appears to be the case with the majority of correspondents who write letters to the *B.M.J.* regarding the immediate future of medical practitioners in the United Kingdom. I note with some concern that the majority chiefly exhibit concern regarding the practitioners, and much less so regarding the practice of medicine, or those that they practise upon; and I cannot help but feel that these last two are mentioned in their letters as secondaries, rather than as primaries, as they should be.

Certainly every opinion expressed in those letters is right—so are the different opinions expressed by the Government or the Opposition—but right only to the extent that they are all given in good faith. Otherwise those opinions are simply the result of the personal emotional bias or sentiment of those who give those opinions; and, as I can find no common denominator anywhere among them, to me it seems to be analogous to trying to multiply a donkey by five apples in order to visualize an elephant. If you do not somehow find that common denominator there will be another war—and this time between doctor and doctor, with politicians and the public taking sides, hence at war also—with the result that everybody, guilty and innocent, will again suffer the pains of war and none of the pleasures of victory. Yet President Truman says, "The world is sick of war."

I therefore beg to suggest a common denominator. As demand creates supply, practitioners of the science and art of healing simply exist to supply a demand from the public, and could not exist but for that demand. The Government—every Government and every Opposition—exists for identically the same reason; and when the public does not like a Government it turns it out and would do the same with every medical man if it wanted to. For the past three hundred years the United Kingdom has had Governments increasingly selected and elected by the people; and I believe the average age of each successive Government is somewhere about five years. I have never yet read that during that three hundred years, apart from individual changes, the public have ever yet threatened to dispense with doctors as a whole or even a large section of them, or ever objected to the treatment they received from the medical fraternity as a whole, while the same certainly cannot be said of either politicians or the Governments they control. Therefore one must conclude that the public—"the man in the street"—is a fool, or that he strongly approves of the medical fraternity of the United Kingdom, for the simple

reason that as a fraternity—a brotherhood—it has ever bowed to public opinion and supplied what was demanded from it, while Governments and politicians have not done so.

As the public—the people of the United Kingdom as a whole—is master both of the Government and the brotherhood of practitioners of the science and art of healing, surely here is your common denominator. Taking polling results, one sees a very large proportion of the public do not take the trouble to vote for a new Government, because they are much more interested in to-morrow's dinner than in to-morrow's Government unless one affects the other. I have never yet heard of any single individual who was not keenly interested in who should attend him if he were sick, quite irrespective of to-morrow's dinner; so why not leave it to the public—the public as a whole—to judge which side is right?

In this last war it was not the Governments that fought for the freedom of the British Empire but every man, woman, and child, who were determined to retain the freedom they had held for a thousand years against Normans, Spaniards, French, Germans, Italians, and Japanese. They won because they were free and their opponents were not.

Cannot my brethren trust such a people to decide fairly regarding this issue, this war, the result of which affects most intimately the freedom of every man, woman, and child in the United Kingdom? Yes! I think they can and will. A country, a people which starting quite unprepared and which for two long years alone held the fort of national freedom surely is capable of organizing a scheme to follow out the above suggestions; treating the matter not as a war between my brothers and a temporary Government but as a struggle of my brothers to preserve their collective freedom. If such a scheme cannot be found, then it is a sure sign that England is no longer free except in name but the feudal serf of an authoritarian Government which it cannot control, which arrogates to itself the right to remain free to do as it likes, and at the same time to deprive the public of its inherited freedom.—I am, etc.,

Siam. M. CARTHEW.

SIR,—Admittedly we as a profession advocated a National Health Service to include dependants of insured persons and provide laboratory facilities for all. The Act which has been passed is a travesty of these principles, and while it may not benefit the practitioners it certainly will be to the detriment of the patient, who will incidentally be "paying through the nose for it."

Its main aim, in my opinion, is to control certification, and the general practitioner will only be responsible to his immediate superior and have little interest in the patient at all. It is my earnest desire that the profession as a whole will reject this totalitarian method of turning a once noble profession into a Civil Service.—I am, etc.,

East Kilbride. J. MCLAREN.

Conditions of Service under the Act

SIR,—I am strongly of the opinion that immediate steps should be taken to publish a statement both in the medical and lay Press, and also, if thought advisable, to convey it to the Minister, to the effect that the medical profession would almost certainly be prepared to work the National Health Service as set out under the Act if the following questions of principle were conceded.

(1) The right of appeal to the courts against dismissal from the Service.

(2) The right of all boards, councils, and committees set up under the Act to appoint and remove their own chairmen.

(3) The removal of anything in the Act which would tend (i) to restrict the relationship between the general practitioner and his patient, (ii) to bring the doctor under the direct control of the Minister of Health of the day—namely the clauses in the Act which (*a*) make the doctor the tenant instead of the owner of his practice, (*b*) restrict his right to practise where he pleases (the distribution of doctors could easily be safeguarded by regulations or orders, and by arrangement with local executive committees).

(4) The avoidance of any form of basic salary as a means of payment of general practitioners. This would make the doctor's remuneration at least in part dependent on the Minister's assessment of his worth instead of on the number of patients who choose him, and would inevitably create divided loyalties which, among other things, might have the effect of restricting the doctor's freedom of action in giving certificates. This state of affairs would obviously militate against the interests of the patients.—I am, etc.,

London, W.1. DORIS M. ODLUM.

The Plebiscite

SIR,—There are two remarks in the statement by the Chairman of Council on the plebiscite as published in the *Journal* of Dec. 21, 1946 (p. 957), which do not appear to me to be justified. In the first place Dr. Dain states that "of the doctors mainly concerned—i.e., the general practitioners—64% had voted against negotiating." I must protest against the statement that general practitioners are those mainly concerned, and would point out that of those who voted only 45% were in categories 2 or 3—i.e., general practitioners or their assistants. If it is the view of the Council that the votes of the remaining 55% were to be considered of less value than those of the general practitioners, a statement to this effect should have been made before the voting took place.

The second statement to which exception can be taken is: "The young doctors effectively support the majority against negotiation. There is no question of age overweighting the decision." Reference to the table of results shows that the percentage against negotiating in the four age groups gets progressively larger from the younger to the older groups—namely, 47, 50, 56, and 60 respectively. From this it would appear that it is the older members who are responsible for the decision that the committee should not negotiate.

It is to be hoped that the Representative Meeting will bear these facts in mind when considering the recommendation of the Council, who, I understood Dr. Dain to say at a meeting held at Hertford, are themselves by no means unanimous as to whether the profession should negotiate or not.—I am, etc.,

Welwyn. A. P. FORD.

SIR,—Dr. H. B. O. Cardew (Jan. 4, p. 29) asks us to accept his view that the Labour Party, who believe that nationalization is the cure for all evils, and who actually received fewer votes than the other two parties together who take the opposite point of view, has a clear mandate from the country to pass the Health Act. If we do this, we must still more recognize the fact that the B.M.A. has a clear mandate from the whole profession by 56% to 44% that no further negotiations on this present Act should take place. Does Dr. Cardew really believe that, by turning the doctors into Civil Servants and by creating a large army of lay Civil Servants to work the Act, the public will get a better service; or can it be that it is not only those who are opposed to the Health Act who may have self-interests?—I am, etc.,

Camberley. LESLIE HARTLEY.

SIR,—The plebiscite is stated to be a decision as to the principles of the profession. On a matter of principle all members have an equal voice, just as all are equally subject to accepted ethical principles and serve equally on ethical committees and the G.M.C., whether consultant, G.P., or whole-time salaried M.O. On Dec. 12 there was known to be a majority of 3,496 out of 56,671 against negotiation. Dr. Dain said (*Journal*, Dec. 21, 1946): "The B.M.A. is a democratic body and . . . the Council has no mandate to negotiate."

This majority derived very largely from the 4,959 majority of the 17,841 G.P.s. 21,021 other civilian doctors had a majority for negotiation. The votes of 8,600 Service doctors are omitted. Dr. Dain said (*Journal*, Dec. 21, 1946), quoting the recommendation that the Council had decided to lay before the Special Meeting of the Representative Body on Jan. 28: "Because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into negotiations. . . ." There was this known majority against negotiations on Dec. 12 of 3,496. There was a majority against negotiation among general practitioners qualified more than 15 years of 3,597. Dr. Dain said: "There is no question of age overweighting the decision."

By provisions under another Act patients will be paying contributions, but not for medical care after the appointed day, since the B.M.A. says "No." Hospitals will be expected

to reject Government aid. Chemists will have no Government-franked prescriptions. Doctors will have no Government pay. Patients, hospitals, chemists, and doctors will have less money. The standard of medical care will inevitably fall, nor has the B.M.A. been able so far to persuade the Divisions to agree to any scheme of organization of what care will be available. Dr. Hill said: "The doctors will be loyal to their calling and to their patients, to whom as always they owe their first duty." And all this because of a majority of 3,496 out of 56,671. There must be an Amending Act, a precedent for every trade union that disagrees with any future Act. The Commons, the Lords, the Royal Assent go for nothing. This present Act does not exist—because of 3,496 out of 56,671.—I am, etc.,

Hove. WILLIAM BOURNE.

SIR,—As one of the doctors in the Services who did not have an opportunity of voting "Yes" or "No" in the recent ballot, I would like to draw attention to an aspect of the result to which insufficient attention appears to have been given—and that is the fact that only 40% of the profession actually voted against any renewal of discussions with the Government. No less than 35% voted in favour of negotiating, while as many as 25% either did not or could not vote at all.

The point to be observed, therefore, is that the profession appears to be fairly evenly divided in opinion upon the matter, and therefore it is doubtful whether the B.M.A. could count on the support of any substantial majority of the profession in seeking, at this juncture, to break off negotiations upon an Act which has already become the law of the land.

The Presidents of the Colleges, in their constructive letter to the Minister, dated Jan. 2, have outlined the main objections felt by doctors to the Act, and the Minister has now made a conciliatory reply in which he has expressed a willingness to negotiate freely within the framework of the Act, and to endeavour to meet any views of the profession which do not conflict with the principles of the Act.

There can surely be little justification, in view of these circumstances, for now persisting in refusal to negotiate.

The Act is now law, but the details of its shaping still depend largely upon the results of free and constructive discussion between the Government and the doctors. It is surely in our own interest and, even more important, in the interest of the nation, for the medical profession at this stage to approach the problem in a spirit of constructive co-operation, free if possible from political bickering, and to do all in its power, while there is yet time, to advise the Minister on all matters which require clarification, elaboration, or amendment within the framework of the Act.—I am, etc.,

London, N.W.3. A. B. COOK.

The Press and the Doctors

SIR,—You write in your leading article entitled "A Moral Issue" (Dec. 28, 1946, p. 993) that the medical profession as a result of the plebiscite has had a bad Press. It may be pertinent to point out that some journals have descended to actual misrepresentation of facts in their desire to belittle and traduce the conclusions to be drawn from the answers to the plebiscite. For example, *The Times* in its issue of Jan. 6 prints on its front page a statement that "the clumsy attempt to enforce a closed shop on municipal, medical, and nursing staff undoubtedly influenced the doctors voting in the recent ballot." The forms asking doctors to vote were issued in the week ending Nov. 16, and recipients were urged to reply as soon as possible; the "clumsy attempt" was made on Nov. 29, by which date it would be a safe bet to assume that nine-tenths of replies had been made.

The *News Chronicle* in its issue of Dec. 14 reported hopefully a "break-away movement from the B.M.A." in certain bodies which it described as "medical unions," "the biggest being the Medical Practitioners Union and the Confederation of Health Service Employees." It went on to say, "at present there are about 10,000 doctors in 15 or 16 unions," and it urged that these medical unions should "get together and act as one." It is reported that the Socialist Medical Association, which "is a political organization affiliated to the Labour Party," expressed the confident conviction that "fewer than 10,000 doctors will refuse to co-operate with Mr. Bevan."

On Dec. 16 I addressed a letter to the *News Chronicle* pointing out that there is only one body—the Medical Practitioners Union—which is recognized both by medical practitioners and by the T.U.C. as a medical trade union; its present membership I stated on the authority of the general secretary to be approximately 4,000, as compared with 7,000 before the war, while the B.M.A. during the same period has grown from 40,000 to 54,000. I asked for evidence supporting the statement that "there are about 10,000 doctors in 15 or 16 unions." In a covering note to the editor I said I did not expect him to publish my letter, but I hoped he might wish to correct statements which were clearly not in accordance with facts. Needless to say, no notice was taken of my communication.—I am, etc.,

House of Commons. E. GRAHAM-LITTLE.

Five Impossible Clauses

SIR,—Mr. Bevan's reply to the Presidents of the Colleges leaves the situation quite unchanged. There are five clauses incorporated in the Health Service Act which it is impossible to remove by negotiation, since Mr. Bevan is only ready to negotiate within the principles of the Act. These are:

(1) The basic salary.

(2) The refusal to allow an appeal from the Minister's decision in cases of dismissal.

(3) The direction of doctors. Under the Act no doctor can settle in *any* district without the permission of some local or county organization.

(4) The refusal to allow the buying and selling of practices. This is fundamental, for eventually the State will be the owner of every practice in the country. This means a State monopoly of medical practice and the complete subjugation of it to the State with all that that implies.

(5) The penal clauses, which are outrageous to any free community.

All these things are beyond negotiation now that the Bill has become law. Before, however, we say "No" finally, is it not possible for the B.M.A. to elect a committee to discuss these vital clauses with the Minister with a view to discovering the possibility of removing these fundamentally objectionable clauses by means of an amending Bill? The rest of the Act is more or less workable, but these five clauses make it impossible for the majority of us to accept the Act. On the result of that discussion we should be in a position in which we could say "Yes" or "No" beyond question.—I am, etc.,

Histon, Cambs. A. E. MOORE.

Allergic Reactions to Penicillin

SIR,—Allergic reactions to penicillin were reviewed by Dr. A. I. Suchecki (Dec. 21, 1946, p. 928). He recorded forty-seven cases and divided them into four classes: (*a*) allergic hydrarthrosis, (*b*) urticaria, (*c*) simulating serum sickness, (*d*) anaphylactic-shock-like syndrome. All these reactions followed intramuscular injections of penicillin. The following record is of interest in that the father developed hydrarthrosis and the son developed urticaria after sucking penicillin lozenges, and both proved very sensitive to a penicillin skin test.

CASE RECORD

On Dec. 13, 1946, I was called to a boy aged four and a half years who had pain on swallowing, pyrexia, and swollen discharging tonsils. I prescribed penicillin lozenges to be sucked during alternate hours and small doses of aspirin, phenacetin, and Dover's powder. On the first day he seemed to enjoy the lozenges; on the second day he had to be coaxed to take them, and in the evening developed swollen lips and said his "tummy tickled." When I saw him on the third day his tonsillitis was considerably improved, but he had oedematous lips and large urticarial weals on abdomen, thighs, and upper arms. He had refused penicillin that morning. No more penicillin was given and the next day his urticaria disappeared, to reappear for a short while in the evening.

On Dec. 29 I rubbed some penicillin ointment (500 units in 1 g.) into an area of approximately four square inches (25 sq. cm.) of the upper arm. The skin immediately turned crimson and stayed so for twelve hours, the patch being visible for twenty-four hours. Plain petroleum jelly rubbed into a similar area produced no coloration.

On the second visit to the boy I was asked to see the father, who complained of a tickling throat and a feeling of incipient

head cold. I advised him to suck some of the penicillin lozenges. Two days later his left knee was swollen, with fluid in and around the joint. It was tender but not red, and his temperature was normal. The penicillin lozenges were continued, and by the next day his right knee was mildly affected in the same way, and hydrarthrosis of the joints of the fingers prevented full flexion. The penicillin was stopped and within twenty-four hours the joints appeared normal. A skin test showed a sensitivity equal to that of his son.

This record shows once more how indiscriminate use of penicillin can produce startling results. It also points out the benefit of knowing about a patient's sensitivity to penicillin, so that an attempt may be made to desensitize him in preparation for a possible future sudden need for penicillin.—I am, etc.,

Leeds. R. A. MURRAY SCOTT.

SIR,—Dr. A. I. Suchecki's article on the above subject (Dec. 21, 1946, p. 938) prompts me to write of a recent case which showed somewhat unusual features. On Oct. 14, 1946, a male patient of mine was admitted to hospital because of an acute septic infection of an old gunshot wound above the right ankle. For five days he had sodium penicillin parenterally in repeated doses amounting to 100,000 units each 24 hours, and there was a rapid improvement both generally and locally. Penicillin was continued as a local treatment, and improvement was maintained until on Nov. 22 he developed a mild urticaria on the neck and shoulders and two days later a generalized angioneurotic oedema, which gradually subsided under "benadryl."

The interesting features seem to be (*a*) the late reaction—five weeks after cessation of parenteral treatment—and (*b*) the development of severe sensitization during local application.—I am, etc.,

Corbridge. J. N. TURNBULL.

Curare

SIR,—The use of curare in the production of relaxation has been hailed by many anaesthetists and surgeons as a milestone in anaesthesia. The comments of the nursing profession are, however, very different. I have made inquiries of half a dozen ward sisters, and without exception they condemn the use of curare on three grounds: first, that patients are more frequently in a condition of shock when they return to the ward. This is probably due to insufficient anaesthesia. Secondly, that marked respiratory depression is usually present, which requires the unremittent attention of a nurse for a long period of time. Thirdly, that paralytic ileus frequently complicates the recovery of the patient. This condition may of course come on after any variety of anaesthetic, but the impression is gaining ground that it occurs much more frequently after the use of curare for an abdominal operation. One of my surgical colleagues has received a letter (which I have permission to quote) from the matron of a nursing home, in which she asks whether she is justified in restraining anaesthetists from using curare in her home owing to the many cases of ileus that have occurred and the inability of her nursing staff to cope with them without the presence of a resident medical officer.

Insufficient attention is often paid to the point of view of the nurse in the assessment of a new drug. Too little time is spent by the modern anaesthetist in the ward, watching the post-operative course of his patient. Curare is an extremely valuable addition to the armamentarium of the anaesthetist, but it is not the perfect anaesthetic drug—for which we are still seeking.—I am, etc.,

London, W.1. MASSEY DAWKINS.

"Lissive" Action of Curares

SIR,—The recent article on *d*-tubocurarine chloride by Kellgren *et al.* (Dec. 14, 1946, p. 898) is not quite correct where it implies that we attributed the selective rigidity-removing ("lissive") action of some curares to a *sedative* effect upon the central nervous system.

We were unable to establish the source of the "lissive" action of curare in canine tetany or in man. We found it to be the property of some samples only, and those samples could not be identified geographically. One of us subsequently found the same property (in respect of canine tetany only) in the non-quaternary alkaloidal fractions of certain Strychnos and other plants (1937), and noted that its presence was accompanied by a mixture of curariform and strychnine-like actions. It thus seems possible that the "lissive" action of some curares is due to a combination of two antagonistic effects—one centrally excitant, the other peripherally depressant. If this is so, the fact may ultimately be capable of therapeutic exploitation.—We are, etc.,

St. Bartholomew's Hospital Medical College, London. H. HARTRIDGE. RANYARD WEST.

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Acroparaesthesia and its Treatment

SIR,—Some time ago Dr. F. M. R. Walshe discussed this syndrome in the *Journal* (Nov. 3, 1945, p. 596) and also described it in the fourth edition of his *Diseases of the Nervous System*. This syndrome is found chiefly in women, but recently I have found it also in men. It consists of weakness and stiffness in the forearm, especially when starting their work in the morning, and dropping things from the affected hand, which feels clumsy. In addition there are symptoms of a neuralgic character: numbness, and pins and needles in the fingers and hand. There is always marked tenderness of the extensor muscles in the forearm. Walshe prescribed rest as the only effective treatment. In severe cases he advocated a week in bed propped up during the day, with the arms in slings and taken out only for feeding, etc.

For several months now, following the work of Good (*Minor Medicine*, p. 169) and Kelly (*Ann. rheum. Dis.*, 1945–6, **5**, 1, 69) I have treated several of these cases with excellent results. The treatment consists of injecting 0.5% procaine into tender spots found in the extensor mass at the level of the neck of the radius. The needle is inserted into the muscle and its point is then used as a probe to find the tender spots. When the exact spot is located by the needle point there is no doubt about it, for the patient, however stoical, will be unable to suppress a wince. Inject 0.5 ml., then probe for other spots, watching the patient's face, and inject again.

After treatment, when the anaesthetic effect has worn off, the pain may be worse for a day or two. The patient should be warned. Great relief follows. If this is not complete further injections may be given in a week's time. At this second examination the injected spots will no longer be tender but others will be found in much the same area. It is seldom that the injection treatment has to be repeated more than twice.—I am, etc.,

London, S.W.4. A. P. MAGONET.

Endogenous Depression in General Practice

SIR,—I was interested in the article on this subject by Dr. C. A. H. Watts (Jan. 4, p. 11), particularly in his emphasizing that most of these cases can be treated outside a mental hospital with much better results; with this I am in entire agreement, and it is the goal and aim of most medical men. Among the doctors in mental hospitals we have some who are most distinguished and of the highest integrity, but there are others who are unfortunately incompetent for this type of work or who are indifferent, under whom the patient gets better in spite of them and not because of them. Very much good is done in some mental hospitals, but in others there is much that could be improved, and there is a tremendous drainage of the nation's money, medical man-power, and nursing staff, who take away with one hand what they unsuccessfully and feebly attempt to give with the other. When the patient comes out of hospital he finds attributed to him qualities so peculiar and so amusing that the whole position would be farcical if it were not so deadly dangerous and tragic.

I would most earnestly appeal, Sir, for the complete reorganization of conditions in some mental hospitals which, it is public knowledge, are far from good, and for breaking completely the archaic laws and decaying bonds which loosely bind the whole structure. They perpetuate the very conditions which they are impotent to cure. It is a system which needs rapid clarification from the shroud of obscurity which surrounds it in an abysm of futility and waste.

I was interested to read also in the same issue (p. 33) the remarks of Dr. L. Sheldon, who states that no fewer than

four cases—two of carcinoma of the stomach, one of gastric ulcer, one of advanced pulmonary tuberculosis—were erroneously diagnosed as cases of anxiety neurosis within six months, to his knowledge alone. I would like to ask Dr. Sheldon what would have happened if by a chain of circumstances these patients had unfortunately been admitted into a mental hospital, where most of the patients' complaints are invariably put down to imagination and persecution mania. No doubt they would have died of their organic disease, but not before developing mental symptoms which would of course have justified the original false diagnosis of anxiety neurosis.—I am, etc.,

London, N.W.11. A. LIONEL ROWSON.

Primary Agranulocytic Angina

SIR,—Thank you for your kindness in publishing my paper on agranulocytic angina in your issue of Dec. 14, 1946 (p. 897), as well as for your courteous and interesting annotation (p. 905). I have since ascertained through the kindness of Dr. S. B. Benton, the deputy medical superintendent of the Nottingham City Hospital, whom I must thank for allowing me access to the follow-up records, that the patient in question turned up unexpectedly after a year's absence. His condition remains satisfactory. There are no signs or symptoms, while his total white-cell count is 8,000 per c.mm.—the differential count being: polymorphs 76%, lymphocytes 24%—thus adding weight to our suggestion of spontaneous recovery.

I feel, however, that the pentnucleotide did help not a little in tiding him over the acute stage and that it should not be absolutely withheld, especially in these cases where septic complications, which of course demand penicillin and perhaps pyridoxine, are not a major factor. I agree that in cases where the causal factor is a chemical poison such as thiouracil or sulphonamides the immediate cessation of administration of the poison will do more perhaps than anything else to get the marrow going again, for obvious reasons.—I am, etc.,

Nottingham. I. M. LIBRACH.

Haematological Heresy

SIR,—I was greatly interested in the article by Dr. R. R. Bomford (Dec. 28, 1946, p. 996) under the above title. It stimulated thought on a problem which most of us have regarded as settled beyond reasonable doubt, and it is right that all hypotheses should be subjected to such attacks, whether or not they emerge triumphant or are superseded by newer theories more consistent with the known facts. In the case of the maturation theory of the causation of pernicious anaemia the evidence in its favour is so strong as to make it well-nigh incontrovertible. However, like Dr. Bomford I have often been at a loss to explain the high level of blood destruction which is apparent from the evidence of increased phagocytosis of red-cell elements, the haemosiderosis of liver, spleen, and other organs, bilirubinaemia and methaemalbuminaemia (Fairley, 1941), and from the increased excretion of urobilinogen. Nevertheless it hardly seems necessary to abandon a well-founded theory on this account if, as I believe, it can be modified in such a way as to explain fully these findings without delving into the limbo of hypothetical toxins, as suggested by Dr. Bomford.

It has often been shown that the fragility of the red cells in pernicious anaemia is not increased, but there is no evidence that the late precursors of the red cells, the haemoglobinized megaloblasts, are not more fragile than normal, or at any rate more liable to phagocytosis in the reticulo-endothelial system. If this is in fact the case it may well be that lack of the haematinic principle disturbs erythropoiesis in such a way as not only to produce premature haemoglobinization but also to render the cells more liable to destruction—probably at the stage that extrusion or disruption of the nucleus takes place. If I may adopt Dr. Bomford's simile of the motor-car factory, it is not the lack of an essential part which is the trouble but the provision of a faulty part rendering the car liable to explode when the starter button is pressed. We then have the position where there is an increase in the rate of production to compensate for the shortage of cars, or red cells, in circulation and an increase in "scrap," as evidenced in the body by haemosiderosis, bilirubinaemia, etc. This theory also has the advantage that it readily explains the lack of reticulocytes in the circulating blood of an untreated case and the dramatic reticulocyte response to liver therapy, even accompanied as it sometimes is by a shower of nucleated cells; since, when the cells are no longer destroyed at the stage when the nucleus is lost, there is bound to be a rapid increase of very young cells in the blood stream.

I am aware that this theory has no experimental backing, but at least it involves less alteration in an otherwise adequate theory than the alternatives suggested by Dr. Bomford. Perhaps in these days of tracer elements it may be possible to settle this question once and for all, but in the meantime we must be grateful to Dr. Bomford for renewing interest in this subject.—I am, etc.,

Harefield. F. E. T. SCOTT.

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SIR,—During the war I found myself transformed from a clinical biochemist into a haemotologist responsible for teaching up to 120 students a year. Being initially profoundly ignorant of the subject, and my haematological colleagues being inaccessible, I was forced to study the literature and to supplement this wherever possible by my own observations. The maturation-arrest theory of pernicious anaemia is, as Dr. R. R. Bomford (Dec. 28, 1946, p. 996) shows, unable to co-ordinate many of the facts already known. The Ehrlich-Ferrata (1914) hypothesis of erythropoiesis (that is, that in pernicious anaemia an abnormal series of red-cell precursors—megaloblasts—appears) explains the morphological facts; and La Cour (1944) showed that in the marrow of untreated pernicious anaemia mitotic figures were increased and that 70–80% of these were abnormal; treatment with liver extract returns the marrow to normal.

These observations suggest that the liver principle does in fact act on the marrow and that its function is to permit normal mitosis; in its absence abnormal mitosis occurs and produces abnormal cells, probably at a faster rate than in the normal. The high urobilin excretion in pernicious anaemia demonstrates that a haemolytic process of considerable intensity is occurring simultaneously. Erythropoiesis can proceed at rates six times greater than normal, as is shown by the response to splenectomy for acholuric jaundice during or just after a crisis (e.g., Roth, 1927), and the hypothesis that urobilin is derived from haemoglobin precursors is unsupported by evidence and is chemically most improbable. This means that the theory of abnormal erythropoiesis proceeding at an increased rate and the theory of increased haemolysis are both true and must be reconciled. The hypothesis of selective lysis of abnormal reticulocytes is most attractive. On my reading of the original theory abnormal cells are formed and destroyed by the normal processes of the body more rapidly than are normal cells, and the anaemic state which develops is the resultant of these two processes. To invoke haemolytic toxins may be necessary for the explanation of dibothriocephalus anaemia and for that associated with stagnant loops of bowel, but is surely unnecessary in true pernicious anaemia.

Many haematologists fail to distinguish between normoblastic and megaloblastic erythropoiesis. This fundamental error arises from Doan, Cunningham, and Sabin (1925), who misused the term megaloblast in that, ignoring the rules of scientific nomenclature, the 30-odd years' priority of Ehrlich, who applied it to a rather mature cell found in pernicious anaemia, and the 12-years' priority of Ferrata and Negreiros-Rinaldi, who extended it to the whole series of abnormal red-cell precursors found in pernicious anaemia, they redefined it as the most primitive erythropoietic cell of foetal and adult haemopoiesis. Sabin soon identified her "megaloblasts" with those of Ferrata, and the theory of maturation arrest is a logical necessity of this erroneous identification. It was naturally soon "confirmed" by studies on material from which true megaloblasts (Ehrlich-Ferrata) are known to be absent. Not until 1938 did Sabin admit that cells morphologically identical with the megaloblasts of pernicious anaemia are not present in normal rabbit marrow (see Jones, 1943).

It is surely time that the sections on erythropoiesis found in the textbooks should be remodelled to agree with the facts. The maturation-arrest theory appears in all the textbooks of

physiology with which I am acquainted, and it does not agree with the observed facts. A lead has been given by Wintrobe and by Whitby and Britton. Let us now persuade the physiologists to describe theories which agree with observation; in this way they would ease the task of their students and of their colleagues in the field of clinical haematology.—I am, etc.,

London, N.W.10. GEORGE DISCOMBE.

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Diet and Canine Hysteria

SIR,—The preliminary report (Dec. 14, 1946, p. 885) of Sir Edward Mellanby on the experimental production of the "hysteria" syndrome in dogs by feeding "agenized" flour is of very considerable interest to the veterinary profession. Although experience had forced the majority of practitioners to consider the causative factor to be located in wheaten products, yet few appeared to have any idea what that factor was or how it worked. Sir Edward's findings will also prove to be of the greatest assistance to those who are studying canine encephalomyelitis and distemper virus encephalitis, since in both these diseases the "hysteria" syndrome frequently complicates, or rather is superimposed on, the other symptoms in such a way as to puzzle the keenest observer.

The purpose of this note is to suggest the precaution that before any feeding experiments on human volunteers are conducted a thorough study should be carried out of the histology of the central nervous system of (1) heavily "agenized" dogs, and (2) "agenized" dogs infected by distemper virus, for the following reason. During the course of a study of the pathology of disseminated encephalomyelitis of the dog in 1927–9 it was demonstrated by J. R. Perdrau and L. P. Pugh (*J. Path. Bact.*, 1930, **33**, 79) that four out of the fourteen cases investigated showed demyelination of the type commonly found in subacute disseminated sclerosis, and, just as in the case of its human counterpart, the hypothetical demyelinating toxin could not be discovered. In these circumstances it does not seem beyond the realms of possibility that Mellanby's "toxin" may well open up a still wider field of greater importance than would at first appear.—I am, etc.,

Sevenoaks. L. P. PUGH.

Sulphadiazine in Infantile Gastro-enteritis

SIR,—With reference to Dr. C. J. Penny's letter (Dec. 28, 1946, p. 1006) regarding the efficacy of sulphadiazine in infantile gastro-enteritis, my experience with sulphaguanidine in the treatment of acute bacillary dysentery may perhaps be of interest. While acting as medical officer in charge of the dysentery wing at Changi prisoner-of-war hospital, Singapore, from June, 1944, to September, 1945, I carried out a controlled experiment to test the relative efficacy of sulphapyridine and sulphaguanidine in acute bacillary dysentery. Sulphapyridine was extremely effective in practically all cases in doses of 3 g. daily for two days. Sulphaguanidine in doses up to 15 g. daily (the most we could afford from our small stock) was ineffective in severe bacillary dysentery and was far slower in controlling the symptoms in moderate cases. From these results we concluded that the action of sulphaguanidine was not local but depended upon the amount absorbed into the blood stream. I may add that over four thousand cases of dysentery were dealt with during this period, and we had ample clinical material on which to prove the result of the experiment.—I am, etc.,

Winchester. W. J. E. PHILLIPS.

Tuberculosis in Industry

SIR,—In his paper on "Tuberculosis in Industry" (Dec. 28, 1946, p. 975), Dr. Frederick Heaf refers to the detection by mass radiography of symptomless cases where laryngeal swabs or gastric lavage show tubercle bacilli in conjunction with minimal radiographic lesions. Dr. Heaf asks: "Are we to regard them as active, infectious cases with respect to their employment and need for treatment?" He answers his own question: "Personally I think we should take every precaution *to prevent the spread of infection* and to arrest the disease, for *we have a good chance of curing these cases*; and that a compromise between employment and treatment *while activity exists* should be avoided. [The italics are mine.] In the past too much time and skill have been wasted on the impossible task of restoring the advanced case to health when consideration of the morbid anatomy would have caused us to direct our energies to efficient treatment of early cases."

With that last sentence I agree; but I dissent from the implied suggestion that the former group of cases should occupy sanatorium beds "while activity exists." Wherein lies the activity? Not in symptoms, since none are present, but in minimal radiographic signs and a few tubercle bacilli detected with difficulty. At this stage there is little risk of "the spread of infection." At this stage "we have a good chance of curing these cases." We certainly have. In many of them the disease becomes arrested—a word preferable to cured—without any treatment in the ordinary therapeutic sense. So in the first instance these are cases for observation until the need for treatment is shown to be necessary.

Mass radiography has confirmed the dictum of Sir Clifford Allbut at the beginning of the century—that many patients recover from pulmonary tuberculosis unbeknown to themselves or to their doctor, who was treating them for something else. Moreover, mass radiography reveals gross calcified lesions in persons who, so far as they knew, never had a day's illness or lost a day's work. The findings of mass radiography are certainly causing some apprehension, because they have shown that the essential problem of tuberculosis is as yet unsolved.—I am, etc.,

London, W.8. HALLIDAY SUTHERLAND.

Infertility: Cervical Impenetrability

SIR,—A review of the present state of investigation and treatment of human infertility, a problem of national and human importance, was presented in the *Journal* of Oct. 26, 1946 (p. 618). The conclusion reached was that although more accurate diagnosis has been achieved the result of treatment on the whole is unsatisfactory.

I wish to limit the following remarks to those cases of infertility (a not inconsiderable number) in which the only discoverable "fault" is the failure of virile spermatozoa to penetrate and survive in "ovulatory" cervical mucus. It is suggested that either the interface (the point of contact of the two immiscible colloids, semen and cervical mucus) or unknown physico-chemical factors within the mucus devitalize the spermatozoa and they die. These physico-chemical factors of mucus have up to the present time been comparatively neglected. The solitary published work bearing on this aspect of the subject appears to be "Observations on Certain Rheological Properties of Human Cervical Secretion" (Clift, A. F., *Proc. roy. Soc. Med.*, 1946, **39**, 1)—an investigation carried out in the Nuffield Department of Obstetrics and Gynaecology, Oxford. Cervical mucus is secreted continuously throughout the menstrual cycle, and its quality or consistency undergoes cyclical changes due to the influence of hormones. It is known that this secretion is influenced both in quantity and quality by the administration of oestrone.

When considering a body secretion such as cervical mucus we must remind ourselves that secretions are not true fluids: they are complex rheological systems, and as such they are characterized by rheological properties—e.g., anomalous viscosity, elasticity, flow elasticity, *Spinnbarkeit* (fibrosity), tack, stickiness, adhesiveness, plasticity, work-hardening, and possibly rheopexy, thixotropy, birefringence, etc. Such is the complexity of the cervical mucus. To quote from D'Arcy W. Thompson's *Growth and Form* (London, 1942), under the heading of Rheology and Colloids:

". . . Where the bacillus lives" [and here we may substitute the word spermatozoa] "gravitation is forgotten, and the viscosity of the liquid, the resistance defined by Stokes's law, the molecular shocks of the Brownian movement, doubtless also the electric changes of the ionized medium, make up the physical environment. . . . the predominant factors are no longer of our scale; we have come to the edge of a world of which we have no experience and where all our preconceptions must be recast."

A more analytical study of the rheological properties of cervical mucus is essential to a clearer understanding of the

relation of variations in consistency of cervical mucus to penetrability by spermatozoa. Rheology—i.e., the science of the deformation and flow of matter (πάντα ῥει)—offers conceptions based on special properties of molecules, such as polarity and length, as theoretical aids to assist in understanding these properties. Efforts are being made to replace rough subjective tests for these rheological properties by more accurate objective measurements—e.g., the Scott Blair menstroscope, designed for the measurement of the flow-elasticity of human cervical mucus.

Prof. G. R. Cameron, in his address on cellular pathology given at the Centenary Celebrations of the Pathological Society of London (*Proc. roy. Soc. Med.*, 1946, **39**, 827), said: "We are passing from a period of physico-chemical investigation into the 'submicroscopic period'; we are coming to think of protoplasm in terms of giant molecules and mono-molecular surface films and their physico-chemical properties governed by molecular arrangements. This stage is progressing from a relatively simple colloid chemistry to the involved considerations of high polymer chemistry . . . the methods of such special fields as polarization optics, *x*-ray crystallography, and electron microscopy would seem to be essential for the investigation into protoplasmic reactions." What Prof. Cameron says of the approach to the investigations of protoplasmic reactions can equally be applied to the study of cervical mucus. The biochemistry of bovine cervical secretion is proceeding apace, but no similar chemical investigations have been undertaken with human cervical mucus.

The study of this aspect of infertility is therefore a very comprehensive one. No isolated gynaecologist or biologist working individually can hope to approach the subject from all points of view. Access to the appropriate expert opinion should be made available through a team of workers comprising rheologist, biologist, chemical pathologist, endocrinologist, together with a gynaecologist. Medical personnel interested in the study of infertility will appreciate the important observations and "invasion tests" contributed by Mary Barton and B. P. Wiesner in their article "The Receptivity of Cervical Mucus to Spermatozoa" in the *Journal* of Oct. 26, 1946 (p. 606). "Discoveries in research and therapeutics go hand in hand" (Samuel Wilkes). The solution of the problem of infertility would relieve the "anxiety, unhappiness, and bitterness that childlessness can cause."—I am, etc.,

Bromley, Kent. A. F. CLIFT.

Oedema of Vulva due to Toxaemia of Pregnancy

SIR,—The interesting account (Dec. 28, 1946, p. 988) by Dr. J. P. Bush of a case of oedema of the vulva recalled to my mind a similar case, with a less fortunate ending, which was forced on me at an early stage in my career. In 1934 I was doing my first assistantship in general practice in an isolated and wild country district of north-east England. The countryside was delightful, the practice widespread, but the nearest hospital of any sort 28 miles distant.

One spring morning one of the other doctors in the area notified me that he was to be away for the day and asked me to do any urgent work for him that might materialize. He told me that there was a primigravida, not due for several weeks, about whom he was rather worried, as she had considerable oedema and very heavy albuminuria, whom he would see before he left, but said it was very improbable I would have to call. Inevitably of course a call came to that case in the late afternoon, and I got there to find the girl was having vague pains which her mother thought might be the onset of labour.

I had never seen the patient before, and my dismay can hardly be imagined when I discovered that there was such gross oedema of the vulva (as well as of legs, thighs, and abdomen) as to make vaginal examination completely impossible. In a cottage deep in the country and far distant from hospital, methods very different from those possible at St. Thomas's were necessary, and under local ethyl chloride anaesthesia I incised both labia, releasing a large jet of pale yellow fluid under pressure from each side. After 15–20 minutes the ballooned vulva had subsided enough to allow of vaginal examination, which confirmed that the first stage of labour was well advanced, and an exceedingly anxious "assistant" discussed with the patient's mother the choice between the chances of the patient arriving safely at hospital for Caesarean section or of keeping her at home with safety.

With time obviously short it was decided to carry on at home, and within an hour and a half a live child was born, only to reveal—what had been hidden by the gross oedema of the abdominal wall (and ? "ascites")—that another was to follow. The second child, a breech, followed safely within the next 15 minutes, and all so far had gone well. But an hour later the patient went into her first eclamptic fit, and from then on till her death 36 hours later fits followed at pretty regular hourly intervals despite all the usual treatment.

This, Sir, is a sad story and should never have happened. I tell it so that others who read Dr. Bush's case report may not be deceived into taking the slightest and very unwarrantable risk of temporizing or delay. That way lies disaster—inevitably.—I am, etc.,

W. H. G.

Prevention of Infant Deaths

SIR,—Dr. J. Tudor Lewis (Dec. 14, p. 893), discussing a scheme to attain improved liaison between hospital and home maternity services in order to salvage a certain number of infant deaths, quotes from seven case histories to illustrate his viewpoint, under the heading "The Need for Liaison." The illustrative cases cited, however, predominantly indicate that the main onus for the infant deaths in at least five of the cases must be related back to their too early discharge from hospital. It is hard to conceive how the premature infants mentioned could have become established during their short hospital stay, and, irrespective of the home conditions they had to contend with afterwards, their chances of survival were unnecessarily gravely prejudiced by their early discharge. Despite the all too common excuse of shortage of beds in obstetric units, surely it is a false economy to prejudice these premature infants' chances of survival at the expense of a further week's or ten days' stay in hospital. Another disturbing feature was the frequent incidence of anaemia of the mothers in the quoted cases. Dr. Lewis does not state whether the blood-counts were taken ante- or post-partum, but from the histories they would appear to have been estimated prior to delivery. There is no indication given whether any measures were instituted to correct these anaemias, although the comments he made tend to suggest that they were not.

In our experience quite the commonest maternal cause of the failure of a mother to make a success of rearing her child is post-partum anaemia and debility. It would appear, therefore, that the additional burden of a premature infant, not yet fully adapted to its extrauterine environment, was being placed on an already debilitated mother, who, no matter how willing she may have been in spirit, was physically unable to cope with her task. Case 6 illustrates how immense such an unfortunate parturient woman's task can be. She, poor soul, had an unpleasant antenatal period from hyperemesis, and in addition to being of a naturally apprehensive, nervous disposition was also suffering from some degree of general debility. She could not reasonably be expected, therefore, to be in any better health after her delivery than before it; but in addition to being sent home on her ninth post-partum day, with a small, premature infant, she was expected to feed it every two hours. It is difficult, thus, to concur with Dr. Lewis when he states that "clearly, the death of each one of these infants was caused, directly or indirectly, by the poor 'mothering' and care it received *after* (italics ours) leaving the hospital or maternity unit."

Could it not be more justifiably said that the death in the case of each premature infant be related primarily back to the too short period of institutional care?

The provision of a hostel for the transitional stage between hospital and home periods, to enable the difficult and premature infants to be "hardened off," has the definite advantages claimed for it, and these advantages, we think, are not outweighed by such disadvantages as cross-infection and epidemic types of illness, provided reasonable care is taken by the discharging maternity unit that these infants are themselves healthy and have not been in contact with any such types of infection.

Much, however, can be done during the antenatal period to stimulate parental interest and foster both "mother and father-

craft" by the institution of simple lecture demonstrations for both parents, these being developed as a part of the antenatal service. This interest can be further developed in hospital in the case of a mother with a difficult or premature infant by making her responsible, under supervision, for the entire care of her baby during the additional period of hospital stay allowed for the infant to become established. The hospital almoner also is of great assistance in the welfare of both mother and infant. It is our practice to have the home circumstances of each case investigated by the almoner during the lying-in period, and to be satisfied that sufficient home help and reasonable home conditions exist before discharging the mother and infant from hospital. Although Dr. Lewis states that the liaison obtained by notifying the Health Department of such an infant's discharge and requesting an early visit from the health visitor is ineffective, we have found that, in practice, by ensuring a home visit on the day following discharge, the continuity of supervision of the mother as to the care of her infant is preserved with reassuring results.

We feel, therefore, that the major responsibility in the establishment of small, difficult, or premature babies after birth lies primarily with the maternity unit, and that such a unit must be fully satisfied, when such infants are discharged home, that they are fit to withstand the less suitable conditions in the average household, and that in addition their mothers must be fit, at least physically, to look after them.—We are, etc.,

I. M. HARKNESS.
J. B. COCHRANE.

Nottingham.

"Anaesthesia" or "Analgesia"?

SIR,—Dr. F. W. Roberts in his letter (Dec. 28, 1946, p. 1007) raises two points to which I feel I must reply in self-defence. First, he states that "novocain" and other local anaesthetic agents do not abolish touch, deep pressure, and thermal sensibility, and are therefore true analgesics. I believe that they abolish all these and are therefore true anaesthetics, which is the base of the reasoning that appears faulty. Authority for this may be found in any textbook, and I would quote Langton Hewer's *Recent Advances in Anaesthesia and Analgesia*, fifth edition, p. 143, where reference to the literature is given. Secondly, if I had meant intravenous anaesthesia I would have said so. Reference to the slow drip infusion of dilute procaine in glucose saline is given on p. 139 of the same work.

Whether analgesia is an ugly word is of course purely a matter of opinion. It is much more frequently written than spoken, which suggests that others besides myself find it so; and I have not yet heard of its being used as a girl's name, which is a touching tribute to the beauty of the word anaesthesia. As a matter of fact, I find from Liddell and Scott that there is no distinction between the words in Greek, although the adjective derived from analgesia was used to mean "very painful." This might be held by some to justify the use of the word to describe the occasional nerve block which does not "come off."—I am, etc.,

J. N. FELL.

Colchester.

Abacterial Pyuria

SIR,—Dr. D. P. Wheatley (Nov. 30, 1946, p. 837) brought attention to the fact that no mention had been made of penicillin in the treatment of abacterial pyuria. I have treated several of these cases with large doses of penicillin (over 1 million units) and can record only a temporary slight improvement followed immediately by relapse on cessation of penicillin administration. In contradistinction to Capt. Fieldsend, R.A.M.C., I have always found evidence of prostatic infection with the presence of pus cells and a lessened lecithin content in prostatic beads.

Search for the *Trichomonas vaginalis* has been negative on each occasion despite repeated examination for the same. I have always regarded these cases as infection of the bladder trigone by simple extension from a posterior urethritis and prostatitis. Two cases gave a history of non-specific urethritis, for which high urethral lavage had been administered.

I have treated several of these patients with intravenous neoarsphenamine, and, while recording an improvement and later clearing up in the majority, must submit that some responded only to long-term hospitalization and rest. I should like to add that all were subjected to complete pathological and physical investigation to exclude other causes, and only in the end labelled "abacterial pyuria."—I am, etc.,

F. LANCELEY,
Major, R.A.M.C.

Chester.

Pre-operative Blood Transfusion

SIR,—Many surgeons have wisely adopted the pre-operative blood transfusion to hasten recovery and to minimize the risks attendant upon operation in the anaemic subject. It would seem, however, that some of these surgeons, or their house-surgeons, are unnecessarily delaying the giving of these transfusions until almost the immediate pre-operative period. I would suggest that such a delay, except in a case of active haemorrhage, is not in the best interests of patient or surgeon.

My reasons for making this suggestion will be obvious to all surgeons, but for those who would appear to have overlooked them I append the following: (*a*) Even under the best conditions a transfusion may be followed by a reaction. This complication is always undesirable, but especially so just before an operation. Even in the absence of reaction a transfusion places a considerable physical and mental strain upon the patient. (*b*) Attention has recently been drawn in your columns to the value of adequate nutrition during the week or two preceding operation. Anorexia, a frequent accompaniment of chronic anaemia, is often not overcome until the anaemia has been satisfactorily treated. Moreover, it is surely desirable that the patient should be given the advantages ensuing from improved oxygenation of vital organs for a greater period than the 24 hours or less before a major surgical ordeal.

For these reasons I would plead that the transfusion of surgical cases complicated by anaemia should be undertaken at least one week prior to operation. It may be objected that the adoption of such a measure is quite impracticable because of the shortage of hospital beds. It would seem probable, however, that the increased time spent in hospital during this preparatory period would be counterbalanced by the hastening of recovery following the operation. In some instances it may be of value to admit the patient for two or three days only for the transfusion, and then to re-admit for the actual operation.—I am, etc.,

GEOFFREY H. TOVEY.

Bristol.

Conservative Treatment of Perforated Ulcer

SIR,—I was interested in the summation and verdict on the above given in the annotation in the *Journal* of Dec. 21, 1946 (p. 950). During the past three years I have been investigating these cases from the radiological and clinical aspect, and in a paper to the Faculty of Radiologists in June, 1945, I suggested, in view of the observations to date, that the conservative line of treatment should be given a fair trial. The idea was ridiculed at the time and it was with considerable difficulty that some of my surgical colleagues were persuaded to try the method. The investigations were on the acute abdomen with particular reference to the presence of free gas in the peritoneal cavity.

The radiological detection of free gas in the uppermost dependent portion spells only one thing—a perforation somewhere in the gastrointestinal tract. The subdiaphragmatic gas gives us a fairly accurate estimate of the degree of gas-leak and consequently an idea of the size of the perforation. I would be interested to know the views of surgeons as to the value attached to the presence of free gas in the diagnosis of perforation and if they have utilized the volume of gas present as an index of the degree of leak and size of perforation. Assuming there is a gas-leak in the majority of perforations, it would appear to me that the estimation of volume would be of assistance in determining the suitability of the case for conservative treatment or otherwise. The gas may vary from a millimetre to a couple of inches (5 cm.), and a check can be made during the first few hours as to increase or otherwise. Unfortunately there is at present no method of indicating the stoppage of leak, but we can at least indicate any increase. The gas is absorbed slowly and may take, according to the volume, anything from five to fourteen days. The direct or scout *x*-ray examination should be helpful not only in assessing the degree of leak but also in the differentiation between intra- and retro-

peritoneal perforation—the latter, unfortunately, a more serious drama and with a very high mortality rate.

Two aspects of the radiological investigations impressed me: the number of cases of spontaneous recovery with conservative treatment, and the frequency of perforation in peptic ulcer, without the knowledge of the patient, his medical attendant, or surgeon. Perforation is not always the dramatic picture it is painted and may manifest itself as an acute and transient exacerbation of the ulcer symptoms, when the patient seeks the attention of his relatives, the usual alkaline mixture, and rest in bed before calling his medical attendant. An examination of these cases will reveal minimal free gas—a perforation with rapid sealing. The following morning he is having his breakfast in bed.

I feel confident that peptic ulcers perforate more frequently than we imagine, with quick and transient symptoms, and if a check-up is made in all cases of acute exacerbation of ulcer symptoms free gas will frequently be found. The frequency of the perforating type of ulcer found in routine barium-meal examinations would tend to confirm this, and a careful check-up on the past history may reveal a short period of acute exacerbation of symptoms. The patient may state he remembers a period when he was "doubled up with pain," lasting perhaps for two hours. There is little doubt that he has perforated. Every acute or subacute abdomen should, on admission to hospital, have a scout film of the abdomen, which must be taken in the upright, semi-upright, or lateral decubitus, in order to show free gas or indicate the presence of bowel obstruction. The absence of free gas strongly contraindicates perforation.

My admiration goes to those surgeons who have at least the courage to investigate the field of conservative treatment. Please do not let us precipitously condemn the method; rather let us proceed cautiously with an open and balanced mind, for the treatment is still young, and half a century of surgical tradition is difficult to change. As you state, a perforation is the surgeon's apotheosis, dramatic in the extreme, with the patient gravely ill and shocked. The addition of laparotomy is only too often the last act of the drama, the dropping of the curtain.—I am, etc.,

Hull. J. E. BANNEN.

SIR,—As you point out in the annotation (Dec. 21, 1946, p. 950) on the conservative treatment of perforated peptic ulcer, the mortality rates disclosed do not compare with those obtainable by surgical closure. There is other evidence against the adoption of this method as a routine procedure. It is not a recent innovation everywhere and has been practised on selected cases in at least two surgical units to my knowledge in Glasgow for over fifteen years.

The treatment is reserved—as Hedley Visick suggests as reasonable—for patients in whom the initial spill is small and the signs suggest that the effusion is not increasing in size. Cases of this type amount to less than 5% of all ruptured ulcers. They are nursed on an inclined plane or in Fowler's position, adequately morphinized, and nourished only through the rectum for forty-eight hours; thereafter a conservative oral regime is started. This method has not had an extended application for the following reasons.

A study of the clinical pathology at operation shows that when a ruptured ulcer seals itself before laparotomy the seal is formed by adhesions to some structure of the biliary tract, commonly either liver or gall-bladder. For obvious reasons these are unsuitable structures to form the floor of a chronic ulcer. Infrequently the lesser omentum, mesocolon, or colon, and only rarely the omentum, fills the gap. The last step in operative closure of a ruptured ulcer is or should be the completion of the repair by the interposition and fixation of a tag or tags of the lesser omentum between the sutured ulcer and neighbouring viscera. This has the double purpose of preventing less desirable adhesions and providing a possible source of enrichment to the blood supply of the ulcer-bearing area.

There is a further consideration in favour of operative closure. The removal by suction of effusion and particulate matter may not be necessary, but if Rutherford Morison's pouch is sucked dry and the suprahepatic spaces similarly evacuated the convalescence is eased by the withdrawal of the highly irritant chyme from the peritoneum, and the incidence of subphrenic abscess lowered well below that published by Visick for conservative treatment.

In conclusion it is regrettable that Murphy's route for fluid replenishment is *démodé* among surgeons. When complete gastric rest is required absolute starvation combined with a constant-drip rectal saline will maintain the fluid balance more readily, more equably, and with greater safety to the patient than the alternative method. Hypoproteinaemia can if necessary be dealt with by intravenous plasma or reconstituted serum. Suction drainage through an indwelling nasal tube is uncomfortable, while saline administered intravenously serves principally to stimulate renal function and always carries the danger of pulmonary oedema.—I am, etc.,

Glasgow. A. IAN L. MAITLAND.

SIR,—Courage is needed to sit on a perforated gastric ulcer, for most of us have been taught that a perforated peptic ulcer is a paramount emergency which needs surgical treatment at once, and any failure to effect this represents the dropping of a major brick; but to some Mr. A. Hedley Visick's most interesting article (Dec. 21, p. 941) on its conservative treatment will be hailed with much approval—though this does not apply to his remarks on bigger and better gastrectomies. It is a hard job sometimes to practise masterly inactivity, and some of his observations will act as a powerful encouragement. Sometimes activity seems to run in inverse proportion to experience. One of my duties is to attend a large body of men for whom a considerable first-aid department exists. With one exception the first-aiders know little of medicine, and recently they have been given a preparation of gentian violet—I imagine as an antiseptic. It produces a striking appearance, and every kind of disability is treated with it. So far as I know it does no harm. Patient and attendant are well satisfied at the dramatic evidence of therapy, and so it may well do good. It is a hard and thankless task to do nothing.

The use of morphine for the pain of a perforation seems sensible enough, though I have the feeling that the stomach lavage, the Ryle tube, and the sulphonamides might well be omitted. But there is the danger that it will be considered by friends of patients and attendants that not enough is being done. Mr. Visick's article will sustain them in their conservatism to leave Nature to repair its transgressions. It is a relief to know that the peritoneum can deal with many strange and unexpected foreign bodies. Although I have seen my fair share of the catastrophes to which the human frame may be heir, withal I cannot resist a sneaking attraction for Wordsworth's simple faith "that Nature never did betray the heart that loved her."—I am, etc.,

London, S.W.1. E. GALLOP.

Wholesome Bread

SIR,—It is gratifying to find no less an authority than Sir Edward Mellanby drawing attention (Dec. 14, 1946, p. 885) to the harm that is done to our food by certain organizations who put profits before public health.

For their own convenience the millers of this country by means of subtle propaganda have succeeded in building up a demand for wheaten flour that has had the germ and pericarp removed, and is in consequence considerably inferior as an article of diet to the wheaten flour eaten by our grandparents. We are then faced with the absurd situation of the public spending enormous sums of money on vitamin B products, many of which are prepared from the very substances the millers have removed, while the widespread constipating effects of white denatured flour is relieved by paying certain firms to replace in our diet the selfsame bran that was removed in order to give wheaten flour an unnaturally white colour.

But this is not the whole story. Having created an artificial standard of whiteness as a sign of good quality (by which standard strychnine would be regarded as a much more wholesome substance than cocoa), the millers were forced to push this fallacious teaching to its logical conclusion by saying that the whiter the flour the greater its food value. Unfortunately, wheaten flour is not pure white, even after extracting the important food elements which give wholemeal flour its brown colour, and so a further artificial process of bleaching was introduced in order to render flour dead white in colour, but,

be it noted, not for food or health purposes but for commercial money-making only. Still pursuing this self-interested propaganda, the great commercial interests concerned described this process as an "improvement" and the chemicals used as "improvers," and it is here that I would like to enter a plea for the abolition of this unnecessary interference with our food and for the accurate use of English words, especially in scientific journals.

Hitler gave us many examples of how to disguise unpleasant truths by substituting mild-sounding words, as when he described his cold-blooded murders as "liquidation"; and when commercial firms adulterate our food with poisons which have caused madness and death in numerous dogs let us call it quite plainly "adulteration" and not "improvement."—I am, etc.,

Slough, Bucks. H. TUDOR EDMUNDS.

Sterilization of Syringes

SIR,—The evidence in favour of boiling as opposed to fluid antiseptics for the sterilization of syringes is overwhelming and is quite untouched by the anonymous impressions described by "Ex-R.A.M.C." (Dec. 14, 1946, p. 920). Rather in the spirit of offering testimony against a method that has already been found guilty but not yet condemned to die, the salient points may be stated as follows.

For many years past in venereal disease clinics there has been a small but definite incidence of jaundice, but this condition became more and more common in the Services after 1941, reaching a very high rate in the years immediately following.[1] Its nature and mode of infection were at that time unknown, but it was in many quarters considered as primarily due to arsenic. In 1943 Bigger[2] showed that the existing methods of syringe sterilization by means of spirit were in fact far from effective, and he and MacCallum[3] independently suggested that this faulty sterilization might be in part responsible for the jaundice. The following year, Salaman *et al.*[4] showed that if the syringes were autoclaved and strict antiseptic precautions adopted, then this disease could be practically eliminated from a clinic. (This was later amply confirmed by Laird,[5] who employed boiling.) Boiling of syringes became compulsory for intravenous work, and the subsequent drop in the incidence of jaundice in a department where previously the rate had been high has been described.[6] While the policy was approved, it was not as vigorously pursued in respect of intramuscular injections, not only on account of a relative shortage of syringes, but also as it was considered that syringes were not likely to become contaminated during routine injections by this method as long as care was taken always to boil the needles.

Before syringe transmission was incriminated in respect of intravenous injections there had been several published cases where jaundice had followed administration by the intramuscular route. Hartfall *et al.*[7] (1937) reported hepatitis following the use of gold salts; Kulchar *et al.*[8] described 120 cases following bismuth therapy; and penicillin injections were themselves held responsible in 47 cases by Howells *et al.*[9] in 1946; and 26 others were more recently collected by Hughes.[10] By the present time most venereologists can recall seeing one or several such cases. And now Hughes[11] has shown that with the intramuscular technique syringe contamination is far from infrequent, but there seems to be a little reluctance in accepting the obvious implications of this modern version of the asepsis-antisepsis controversy.

The only point at which there is agreement with "Ex-R.A.M.C." is when he writes: "It is hard to see . . . why an injection of penicillin would be more likely to contaminate a syringe than one of T.A.B., tetanus toxoid, or any of the other routine injections."—I am, etc.,

London, W.2. R. R. WILLCOX.

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Man in Relation to His Environment

SIR,—With reference to the letter on "Man in Relation to his Environment," by Dr. Frank Marsh (Nov. 9, p. 710), and the report of the British–Swiss Medical Conference (Sept. 28, p. 471), perhaps the experiences and conclusions of one who has lived for very many years in hot climates may be of interest. That experience has been a very long and varied one, in the hot back blocks of New South Wales, thirty years in India and Assam, three years in Mesopotamia, and a considerable time in South America. Five years at sea have given him an insight into ships' engine-rooms and stokeholds.

In studying the question of ventilation of spaces, rooms, buildings, and the effects on the human body, three factors must be constantly borne in mind: temperature, saturation, and movement of the air. Of these temperature is by far the least important. The human body can adapt itself to very large variations of temperature provided the other two factors are favourable. Cold, if the air is still and dry, as in Switzerland, is hardly felt. In a blizzard death will occur rapidly if there is no protection. Very high temperatures can be borne if the air is dry and moving. In regulating the loss of heat from the body the skin surface is in man the most important factor. The experiment has been tried with a man exposed to a vitiated atmosphere of keeping the body in that atmosphere and allowing the head to be in the air through a rubber dam. Under these circumstances there is little improvement in his sensations. Reverse the process, body in fresh air, head still in the bad atmosphere, and relief is rapid. A place is spoken of as bracing when the air there is dry and moving, relaxing when the opposite conditions prevail, and this irrespective of the temperature. The Iraki deserts are bracing if the cardinal conditions are observed: keep away from water, keep away from trees, and keep away from buildings and streets. When new units came to Mesopotamia, the tendency was to camp in the shady date groves along the banks of the rivers. Part of the duties of the writer was to chase them out of this into the open desert. He was met with strong expostulations, and it had to be explained why they would keep fitter in a dry and moving air in contradistinction to a still and moist one.

In all his residence in hot climates the writer has never seen or heard of an authentic case of sunstroke, insolation, or collapse through direct action of the sun's rays, though heat stroke and sunstroke are commonly confounded. Instances may be cited which bear out what has been said above. At one time in Bagdad during the 1914–18 war there were a very large number of cases of heat stroke with a very high mortality. Sir William Willcox came out to investigate. He asked how the cases were being treated and was shown a beautifully cool underground cellar such as is common in Iraki houses. There the cases were taken and splashed and bathed with cold water. What could be better than to treat such cases in the cool cellar? But Sir William thought otherwise. He said take them out into the open with improvised shade where there is a breeze, and then use your cold water and electric fans if available. The cases began to recover. In the cellar the temperature was low but the air was still and damp from the breathing of the staff and the water used. Again, in the attack on the Malakand, troops had to be sent in a forced march from Durgai. Capt. Wooley, I.M.S., in medical charge, related that while the men marched through the heat of the day they were perfectly fit. During the much cooler night, when they passed through a deep, rocky gorge where there was little perflation of air, the men went down like ninepins.

One very important point must be remembered: In a dry, hot, moving air the loss of water from the body through invisible perspiration is very large, and large quantities of salt are washed out of the blood—it may be with serious results. In the stokehold this is frequently seen as "fireman's cramp." Give such a sufferer a long drink of salt and water, which he laps down with the greatest gusto, and his cramps rapidly disappear. Intravenous injections of hypertonic saline have been used as an aid to the treatment of heat stroke. Diet in hot climates requires consideration. In cold climates a large number of calories are used in keeping up the body heat. The amount eaten is largely a matter of habit and those coming to the Tropics are inclined to eat as much as they did in a cooler clime. Another point which affects health in the Tropics

is housing. Masonry houses must be of good size, with large and airy rooms and good verandas. Most European houses conform to this standard. It is otherwise with most of the Indian masonry dwellings. The rooms tend to be cellular and ill-ventilated, and in many cases the houses are too small.—I am, etc.,

Taynuilt, Argyll. P. F. CHAPMAN.

Unemployed Specialists

SIR,—Hospitals all over the country are being asked to consider the employment of full-time specialists at salaries of £1,000 per annum, and the Minister of Health has intimated that the Treasury will be willing to meet the cost of these salaries if the hospitals are unable to do so from their funds. Several points arise from a consideration of this scheme. It seems grossly unfair that specialists should have this preferential treatment over doctors who are desirous of entering general practice. It may be said that provision was made for them under the rehabilitation scheme, but this scheme was also available to specialists if they so desired. There must be many hundreds of doctors who would be only too glad of a subsidy of £1,000 for their first year in practice, and there seems no legitimate reason why they also should not be given a grant. It has been said that the specialist will suffer greatly owing to the difficulty in getting established before the coming of the National Health Service and that if something is not done he will be lost as a specialist. This is illogical, as presumably every doctor will be included in the Service, and if a doctor holds specialist qualifications I cannot believe that he will suffer by reason of having done other work in the meantime.

There are many doctors who were discharged from the Services on health grounds long before any provision for rehabilitation was made. Many of these must have suffered considerable hardship, and I have personal knowledge of one case in which neither the B.M.A. nor any other body would give help even in the nature of a short-term loan where a doctor's health had been so impaired as to render him unable to insure his life.

This "spoon-feeding" is nothing short of deplorable, is playing into the hands of the Minister of Health, with whom we are still in disagreement, and, to those who accept it, nothing short of charity or unemployment pay—call it what you will. And all this at a time when there is plenty of work to be done. It is to be hoped that the young men now out of the Services will put their backs into the job, and even if the job is not quite what they would wish do it with a will and do away with any sense of weakness and dependency either on the State or their fellow men.—I am, etc.,

Sonning. J. J. DAVIS.

Colonial Medical Service

SIR,—Further to your correspondent "West Africa" (Dec. 21, 1946, p. 963), may I, after nearly four years' service on the "Coast," add a few points. Like "West Africa" in his early days I have been encouraging medical friends to consider the Colonial Service; but, with the new salary scale suggested by the Harragin Commission, I shall hold my tongue.

Even since 1943 the cost of living has risen considerably, and, as "West Africa" points out, will rise even further. For example, my cook gets and needs 75% more than when I took him over from another European who was leaving the country in 1943. Market prices are, theoretically, controlled in so far as fruit, fish, meat, and one or two other items are concerned, but a very skilful "fleece-the-white-man campaign" makes a mockery of the control. Household goods and basic foodstuffs imported from the United Kingdom are all more expensive than at home. Glassware, china, and other breakables suffer from constant packing and unpacking as well as from "boys." Linen and clothing generally suffer from the effects of a tropical climate. Replacements of all kinds, therefore, are heavier than would be the case in England. The necessity of providing a second home in England for a wife and children is an additional expense which must be considered in assessing the value of incomes applicable to tropical service.

To offer a man in these days £680 with the possibility of rising to £1,200 may attract unmarried adventurers for a short time, but will not retain the services of many men with a family or other commitments to consider. As a result of the Commission's report I will gain financially in the immediate future. In view, however, of the whole trend of policy in the past, as referred to by "West Africa" and one's older colleagues, I view my future in the Service with some apprehension. In consequence, much as I enjoy the type of life and the work and the friendly relationships existing in the department, I for one will leave the Service if the Commission's recommendations are adopted.—I am, etc.,

"THIRTY."

The Unstable Adolescent Girl

SIR,—In her letter (Jan. 4, p. 30) on the subject of the unstable adolescent girl Dr. Muriel Barton Hall gives I.Q.s as criteria for the diagnosis of degrees of mental deficiency, names mental defectives, moral defectives, and social defectives as separate entities, then criticizes the appendix to the report of the Committee on Psychiatry and the Law for offering no explanation as to which cases may be dealt with under the Mental Deficiency Acts. Surely the answer is "mental defectives," and the definitions in the Act are quite clear. Mental deficiency is defined as "a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by diseases or injury." It should be noted that the deficiency is of *mind*, not of that particular aspect of mind which enables a patient to say why it is foolish for Bill Jones to put his trousers on over his head.

It follows that any type of mental inadequacy necessitating care and supervision can properly be dealt with under the M.D. Acts provided the inadequacy is due to inherent causes or was induced by disease or injury before the age of 18 years. Under the M.D. Acts machinery already exists for the care and treatment of a large proportion of unstable adolescent girls, including those unnecessarily labelled psychopaths. While no one would wish to deny the value of mental tests when properly used, a little healthy debunking of the I.Q. may serve to clear the air and stimulate the utilization of the machinery already in existence.—I am, etc.,

St. Albans, Herts. C. GUY MILLMAN.

Medico-Legal

A STERILIZED HUSBAND

Before the passage of Herbert's Act—The Matrimonial Causes Act, 1937—wilful refusal to consummate a marriage was not a ground for proceedings in either divorce or nullity. That Act, however, laid down that a marriage should be voidable on the ground that it had not been consummated owing to the wilful refusal of the respondent. In *Cowen v. Cowen* (1945) the Court of Appeal gave a wife a decree of nullity where her husband had either insisted on using a contraceptive or had practised coitus interruptus, so that he intentionally frustrated conception, one of the principal ends of marriage. The concept of wilful refusal has now been still further widened.

In *J. v. J.*[1] a husband, just before the marriage, had himself sterilized by vasectomy, telling the doctor who performed the operation that he desired it because there was insanity in the wife's family. Mr. Justice Jones found that this act amounted to wilful refusal to consummate the marriage. He rejected the wife's petition, however, on the ground of her acquiescence. Apparently the doctor who performed the operation had insisted that both parties should sign a statement declaring that they fully understood and realized that the operation, while likely to improve general conditions of health and function, produced total and irremediable sterilization. This statement was produced in court. The wife gave evidence that she had signed it on the husband's promise not to have the operation until after they were married, but admitted that she knew of the operation before the marriage. The judge therefore held her to have acquiesced, and ruled that it would be inequitable and contrary to public policy to grant her a decree.

[1] 1946, 2 All E.R. 760.

Obituary

SIR HENRY MARTYN, K.C.V.O., F.R.C.S.

We record with regret the death on Jan. 7 of Sir Henry Martyn, lately surgeon apothecary to H.M. Household at Windsor. Henry Linnington Martyn was born in London in 1888, the son of Henry Matthews Martyn of Broadclyst, Devonshire, and was educated at King's College School, Wimbledon, and at King's College Hospital, where he gained three open scholarships in the University of London intermediate examination in anatomy, physiology, and pharmacology in 1908. Two years' later he won the senior scholarship and qualified M.R.C.S., L.R.C.P., and in 1911 took the degree of M.B., B.S., with honours in medicine, surgery, and forensic medicine, winning the university gold medal. He was elected F.R.C.S. in 1913. Martyn held the posts of house-surgeon and house-surgeon to the aural department at King's College Hospital in 1911. He was resident medical officer at the King Edward VII Hospital, Windsor, in the following year, and clinical assistant at King's College Hospital in 1913. During the war of 1914–18 he held a temporary commission in the R.A.M.C., serving successively as second surgeon and registrar to No. 12 General Hospital, surgeon to the Princess Christian Military Hospital, and surgical specialist to No. 10 General Hospital. In January, 1919, he was invalided out as a result of sickness contracted on active service.

On return to civilian life Martyn settled in practice at Windsor and became surgeon, later consulting surgeon, to the ear, nose, and throat department of the King Edward VII Hospital. In 1936 he was appointed surgeon apothecary to H.M. Household at Windsor, a position he held until 1938, when he was succeeded by Dr. E. C. Malden. He was also consulting aural surgeon to the Maidenhead Hospital, the Staines, Chalfont, Windlesham, and Iver Cottage Hospitals, the Staines Joint Fever Hospital, and Cippenham Fever Hospital. His contributions to medical literature included notes on the treatment of septic wounds in a base hospital (*Journal of the R.A.M.C.*, 1915) and on the operative treatment of septic meningitis (*Lancet*, 1923). Martyn was in attendance when the late King George V suffered from bronchitis in 1931, and he also signed the official bulletins during the late King's illness in 1929. In 1923 he was appointed M.V.O. He became C.V.O. in 1927, and four years later was created K.C.V.O. for his services to King George V.

JOHN H. WEST, M.R.C.S., L.R.C.P., D.A.

The news of the death of Dr. John Hardstaff West at Hill End Hospital, St. Albans, on Dec. 25, will come as a great shock to his many friends and colleagues at Bart's and in Cardiff. John West qualified at St. Bartholomew's Hospital in 1932, and after holding various junior hospital appointments became senior resident anaesthetist at Bart's. After holding this position for some years he went to Cardiff as lecturer in anaesthetics to the Welsh Medical School. He served in the R.A.M.C. during the war years. Dr. John West was an outstanding anaesthetist and was respected and liked by both colleagues and patients. Many of his former students will remember with gratitude his patient instruction and his pleasant personality. Among all his many friends and acquaintances there was no one who did not speak of him with affection. His last illness was borne with the courage and cheerfulness so characteristic of him.

A former colleague writes: Recently saddened by his impending departure from among us, the friends and colleagues of John Hardstaff West will be doubly distressed at the news of his death from acute illness on the eve of his setting out for Nairobi. Ten years ago he had come to Cardiff from Bart's with the highest recommendations—which we soon found were no overstatements—of his charm as a colleague and his excellence as an anaesthetist. As a lecturer in his subject in the Medical School and as anaesthetist to the local teaching hospitals he was much in demand. His work was outstanding and he was the only anaesthetist in the town engaged solely in the practice of anaesthetics. As such he succeeded Gordon Greaves, who was killed in a motor-car accident in 1936. Early in the war a strong case was made for keeping him in this country, but Johnny West was not of the type to remain long away from a fighting front. One day, when examining in London, I was not surprised to receive a visit from him in uniform—to say goodbye on his way abroad. As a major in the R.A.M.C. he was for a time in Kenya. He and his wife, who was also in the R.A.M.C., were married in the cathedral at Nairobi, and they were much attracted to the country. It was not perhaps surprising that after his demobilization and his return to Cardiff we noticed that he was somewhat restless. He soon announced his departure for Nairobi, where he had been invited to become anaesthetist to the hospital and lecturer in the medical school. This was sad news indeed to those of us who valued his friendship and had come to depend on him and his work. He was always quiet, cheerful, and kind. I have never seen him angry or put out in any way, and his benevolent smiling eyes gazing through large glasses gave the utmost confidence to his patients as well as to those of us who knew him and the high standard of his work. Johnny West, as his friends called him, was beloved by all. Our sympathy must go to Mrs. West and to his parents, but for him what Lord Grey wrote of his nephew is very applicable, "I do not feel that we ought to be sorry for Adrian; if the object of life is to live without reproach, to become a fine character, and to act nobly, then Adrian's life has been a complete success."—L. C. R.

C. GRANT PUGH, M.D.

Charles Grant Pugh, for thirty-two years medical officer of health at Southend-on-Sea, died on Dec. 19, 1946. Of mixed Scottish and Welsh descent, he came of a family with a decided medical bent, for his elder brother, the late William Thomas Gordon Pugh, was for many years medical superintendent of Queen Mary's Hospital for Children at Carshalton, and his sister was, before her retirement, a senior member of the London County Council nursing staff. His surviving brother is a dental surgeon in practice in Streatham.

Charles Pugh was educated first at Aberystwyth and then at the Middlesex Hospital, where in 1898 he was Senior Broderip scholar and Murray scholar. He graduated M.B., B.S. with honours in medicine in 1899; proceeded M.D. in 1900, when he was gold medallist, and two years later took the Cambridge D.P.H. It was characteristic of Pugh that he selected his medical school for the reason that the house appointments there were made on the examination results. He would doubtless have been a consultant physician had not the particular circumstances of the Middlesex Hospital made it likely that a considerable time would elapse before he could expect promotion to the honorary staff. After some fruitful years of service on the Metropolitan Asylum Board, and experience as deputy medical superintendent at Bethnal Green, he was for some time with Dr. J. C. Thresh, then in Chelmsford, Essex, finding in him a formative influence of the first importance.

At Southend he was appointed M.O.H. in 1908, and there he found ample scope for his all-round talents, both as physician and as administrator. In those days, when the area was less well served by consultants than it is at the present time, his opinion was frequently sought by his general practitioner colleagues in difficult medical cases. The health services of this rapidly growing population were developed by him on sound lines until the outbreak of the first world war temporarily interrupted his programme. After serving in the Balkans with the rank of captain, R.A.M.C., he returned to Southend, where he was foremost in calling attention to the urgent need for better hospital provision. Within a few years the generosity of Lord Iveagh and a spirited local initiative resulted in the creation of the New Southend General Hospital.

The Local Government Act of 1929 afforded a great opportunity, of which, on Pugh's advice, the corporation took full advantage. The sick wards of the Poor Law Institution at Rochford were transferred from the Board of Guardians and "appropriated" for hospital purposes, and when the extensions begun by the guardians were complete Pugh set himself to the great task of modernizing the hospital. In 1940, a few weeks before his retirement, he had the satisfaction of seeing the

completion, at a cost of £400,000, of new buildings of the most modern design.

Pugh's was an arresting figure in any company. Distinguished in appearance, courtly in manner, and deadly in argument, there were few gatherings which he failed to dominate through sheer personality. In him his committees invariably found a shrewd, far-sighted, and courageous adviser. To his staff he set an example of all that is best in the public service, and with his professional colleagues he was invariably helpful, considerate, and popular. Pugh was instinctively liked and trusted by children, and some of his happiest hours were spent in their company in the wards of his infectious diseases hospital. His own clinical knowledge discerned clearly the nature and progress of the malady which was to cause his death, and he faced the inevitable end with all the stoic courage and lack of complaint which were characteristic of the man. His staff retained their affectionate admiration for him, undimmed by his absence in retirement, and his passing is felt acutely by all who knew and worked with him.

SIR WILLIAM COLLINS, K.C.V.O., M.D., M.S., F.R.C.S.

A correspondent writes: One could scarcely think of Sir William Collins without reference to the brilliance of mind which adorned his person. To that brilliance his scholastic attainments testify, but alone they might present a picture of one whose interests were purely academic. To a superficial observer his natural dignity and reserve might even have given such an impression, which would be quite untrue. A habit of philosophy and practice in medicine are humanizing influences. Added to a depth of kindness and understanding of the problems of life, they moulded a great man whose gifts were used in the service of others in public and in private relationships. His conversation, which he illuminated with his own interest, made one realize how wide were his sympathies and his friendships. Among his medical and nursing interests district nursing owes him much, for he was deeply concerned that the benefits of home nursing should be available without cost to all who needed that trained skill and comfort. As chairman of the Central Council for District Nursing in London for over thirty years and later as president, an office which he held until his death, he was able to advise out of a wide professional experience, a profound knowledge of affairs, and a liberal and statesmanlike habit of mind which made him a generous opponent. In discussion one might momentarily disagree and later realize that he had only more quickly reached the fundamental truth. Thus one learned to rely on him to a degree that makes the loss of his counsel the greater, even if it were possible to fill the place in mind and heart of one who so combined human wisdom and kindliness.

J. J. THOMSON, O.B.E., M.D.

Dr. John James Thomson, who died on Nov. 18, 1946, was born in Lanark in 1883. He completed a five-year apprenticeship in engineering in Edinburgh before he turned to medicine. He was awarded the Beaney prize for anatomy and surgery and graduated M.B., Ch.B. with first-class honours in 1908. After a short period in general practice and as a ship surgeon he emigrated to Canada, and was for a time in practice in Vancouver City and also on Vancouver Island. He was later tuberculosis officer for Vancouver City. He was married in 1912, and in 1914 he entered the Royal Canadian Army Medical Corps and served in France and Gallipoli. As Major Thomson he was then for a long time at the 10th Canadian General Hospital at Brighton, and was awarded the O.B.E. for his services there. On being demobilized he remained in England and was appointed tuberculosis officer for the West Riding of Yorkshire. In 1921 he became tuberculosis officer for the North Riding, and continued in this position until ill-health enforced his retirement in August, 1946. He published papers on the early diagnosis of pulmonary tuberculosis and on the immunization of cattle against tuberculosis. He is survived by two sons.

A correspondent writes: Dr. Thomson's outstanding characteristics were his devotion to his work and his complete selflessness. He was a man of profound intellect, but he had no ambition for himself, and preferred that the good work he did should be kept hidden. He was interested in many subjects—more especially genetics, stockbreeding, philosophy, theology, geology, and music.

We announce with regret the death on Dec. 6, at his home in Dorset, of JOHN LAWRENCE GRAHAM-JONES. Born in 1881, he was the eldest son of the Rev. C. E. and Mrs. Graham-Jones, and was educated at Magdalen College School, Emmanuel College, Cambridge, and at St. Thomas's Hospital. As a young man he saw active service in the South African War as a trooper in the Imperial Yeomanry. He qualified M.R.C.S., L.R.C.P. in 1908, graduating M.B., B.Ch. at Cambridge in 1910. After various residential appointments at St. Thomas's he entered into private practice at Guildford with the late Mr. Branson Butler. Then his bent towards surgery found expression in the 1914–18 war, when he served as surgical specialist in France and later in association with his friend G. R. Girdlestone at the Ministry of Pensions Orthopaedic Hospital, Oxford. After five years in Oxford he removed to Parkstone, Dorset, and was appointed honorary surgeon to the Cornelia and East Dorset Hospital, Poole. In 1933 he retired from practice, and settled in the country near Dorchester. But it was not a life of sheltered ease that he sought, for his activities continued unabated and his liking for a country life gained added scope. He had a deep sense of public duty and gave much time and thought to educational and parochial matters. He was one of the governors of Dorchester Grammar School until 1945. During the late war he became chairman of the Ministry of Labour and National Service Medical Board for Weymouth and Dorchester.

F. B. writes: It was the happy circumstances of his own son's friendship for my two boys at their preparatory school that introduced me to "G.-J." on my settling again in England after some years of practice abroad. I became his partner, and the pleasant professional association ripened into a permanent friendship, though latterly war conditions limited our opportunities for meeting. A man of taste and culture, widely read, and a musician of considerable talent, he was at the same time a first-rate practitioner, and though his inclinations were largely surgical he was none the less a sound physician. His wise counsel and advice were always freely available and unselfishly given, and I valued his opinion. At the Cornelia and East Dorset Hospital, Poole, he rendered devoted service clinically and in committee, ably supporting every measure designed to enhance efficiency. He was medical officer to several residential schools and was especially sympathetic and successful in his care and treatment of children, as likewise of the aged. He was not only doctor, but also friend and adviser to many. Combined with high professional attainments he had a love of outdoor pursuits. His family life was ideally happy, and the sympathy of a wide circle of friends and colleagues will be extended to Mrs. Graham-Jones and their son and daughter.

DR. GEORGE FOGGIN, of Newcastle, who died on Christmas Day, had spent almost his entire professional life in the school medical service. He qualified at Edinburgh in 1890, and from that time onwards his main interests were in ophthalmology and paediatrics. He became ophthalmic surgeon to the Royal Victoria School for the Blind, and was for some years assistant surgeon at the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye. He was the author of several papers on the prevention of early blindness and on errors of refraction in school-children. As long ago as 1894, as a member of the old School Board, he was chairman of the Special Cases Subcommittee of Newcastle-upon-Tyne, which afterwards became known as the Children's Care Subcommittee. His appointment as school medical officer to the Newcastle Corporation was one of the first of its kind, and in 1902 it carried with it a salary of £125 a year. His connexion with the Eye Infirmary allowed him to arrange for the sight testing of school-children some years before this became usual in other parts of the country. Dr. Foggin had almost forty-three years' service as a school medical officer, and his death has come less than a year after his retirement at the age of 83. He had been responsible for opening one of the early central kitchens for feeding school-children in 1908, and right up to his retirement he maintained his interest in all aspects of the care of school-children and in their nutrition.

DR. HARRY MCENTEE died suddenly in his own surgery on Dec. 29. Patrick Henry Maurice Clifford McEntee qualified in Dublin in 1926 at the age of 29. He had been in general practice at Whalley Range, Manchester, for many years and had overworked steadily through the war years. He acted as a member of one of the local medical boards during the war, and was extremely popular with the patients in his large practice. He is survived by his widow and four children.

Universities and Colleges

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

M.D.—*Branch I (Medicine)*: R. A. J. Asher, R. D. Blachford, A. Bloom J. W. C. Cochrane, I. S. Dalton, N. H. Desai, R. G. Evans, W. Fine, R. A. Henson, F. E. Joules, P. D. C. Kinmont, D. C. Lewin, R. I. McCallum, A. T. M. Roberts, D. Stafford-Clark, P. H. Sutton. *Branch II (Pathology)*: K. R. Hill, C. C. S. Pike. *Branch III (Psychological Medicine)*: B. M. C. Gilsenan. *Branch IV (Midwifery and Diseases of Women)*: G. H. Bancroft-Livingston, Jean R. C. Burton-Brown (gold medal), D. A. Davies, P. S. Jaikaran, Muriel G. Rose. *Branch V (Hygiene)*: M. J. Pleydell, T. D. Spencer, S. J. Sutton. *Branch VI (Tropical Medicine)*: S. W. Hinds, O. N. Ransford.

A course of four public lectures on "Some Aspects of Pharmacological Chemistry" will be delivered by Dr. F. Bergel on Tuesdays, Jan. 21, Feb. 4, Feb. 18, and March 4, at 5.15 p.m., in the Physiology Theatre, Gower Street, W.C.

UNIVERSITY OF DURHAM

In a congregation held on Dec. 20, 1946, the following medical degrees were conferred:

M.B., B.S.—Irene O. Blankley, A. Ross, *Diana L. Priest, *P. Wise.
* *In absentia.*

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a quarterly meeting of the Council of the College held on Jan. 9, with Sir Alfred Webb-Johnson, Bt., President, in the chair, the Honorary Fellowship was conferred on Dr. Louis Bazy, formerly President of the Académie de Chirurgie, and consulting surgeon to the French Army, and on Dr. Leopold Mayer, President of the International Society of Surgery.

Prof. G. Grey Turner was appointed honorary curator of the instrument collection in the College. It was reported that Sir Alfred Webb-Johnson had been elected *Associé Etranger* of the Académie de Chirurgie of Paris. It was agreed that Dr. James Craigie, formerly of Toronto, should give an Imperial Cancer Research Fund lecture in the College in place of Prof. W. E. Gye.

The Council reiterated its opinion that a Statutory register of specialists is neither necessary nor desirable.

The Princess Beatrice Hospital, London, was recognized for the resident surgical post required of the candidates for the Final Fellowship examination, and the additional post of Resident Surgical Officer was recognized at the Victoria Hospital, Blackpool.

A Diploma of Fellowship was granted to J. G. Coxon.

Diplomas of Membership were granted to H. Rawlings and M. Redfern.

A Diploma in Child Health was granted, jointly with the Royal College of Physicians of London, to N. F. E. Burrows.

Diplomas in Psychological Medicine, in Laryngology and Otology, and in Industrial Health were granted, jointly with the Royal College of Physicians of London, to the following successful candidates:

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—H. S. Capoore, Margaret T. Collins, J. Cowen, G. R. Debenham, J. Farr, T. C. N. Gibbens, J. R. Hawkings, R. M. M. Hunter, A. Kamal, P. W. W. Leach, L. F. E. Lewis, D. O. Lloyd, N. J. de V. Mather, P. R. A. May, A. R. Norton, G. O'Gorman, M. A. Partridge, Mildred I. Pott, D. Rice, R. A. B. Rorie, D. Rumney, F. T. Shadforth, K. C. P. Smith, K. R. Stallworthy, K. R. Thomas, M. G. Valentine, G. A. van Someren.

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.—A. D. Bateman, P. Chandra, J. V. De Sa, P. R. B. Grimaldi, A. R. Harper, S. Kavanagh, D. G. Lloyd-Davies, W. McO. Macgregor, J. Magill, T. A. Narayanan, H. N. Perkins, H. C. Purcer Smith, S. N. Sarma, C. J. Scott, J. B. Scott, E. M. Sewell, H. J. M. Stratton, A. S. Walker, H. A. Ware.

DIPLOMA IN INDUSTRIAL HEALTH.—A. L. L. Silver.

On April 10 the Council will elect a member of the court of examiners in the vacancy occasioned by the retirement, in rotation, of Mr. E. A. Crook, who is applying for re-election. Fellows of the College desirous of becoming candidates for the office must make application in writing to the assistant secretary of the College (Lincoln's Inn Fields, W.C.) by Monday, Feb. 3.

In the announcement of Dr. Meave Kenny's appointment to the University Readership in Obstetrics and Gynaecology at the British Postgraduate Medical School (Jan. 4, p. 37) she should have been described as *Miss* Meave Kenny.

The Services

Major Hoe Min Sein, I.M.S., medical superintendent, Rangoon General Hospital, has been appointed O.B.E. (Civil Division).

Squad.-Ldr. H. H. S. Brown, R.A.F., has been awarded the Air Force Cross.

The Efficiency Decoration of the Territorial Army has been conferred upon Lieut.-Col. (Hon. Col.) J. A. Matheson, O.B.E., R.A.M.C.

Medical News

A meeting of the Society for the Study of Addiction will be held at the Medical Society of London (11, Chandos Street, W.) on Tuesday, Jan. 21, at 4 p.m., when Dr. A. P. Rossiter Lewis will read a paper entitled "Alcohol and Abnormal Behaviour in Head Injury Cases."

A meeting of the Middlesex County Medical Society will be held at Busch House Open Air School, Isleworth, on Tuesday, Jan. 21, at 3 p.m. Agenda: The special education treatment of handicapped pupils.

A scientific meeting of the Association of Clinical Pathologists will be held at the National Hospital, Queen Square, London, W.C., on Friday and Saturday, Jan. 24 (at 9.45 a.m.) and 25 (at 12 noon), when papers will be read. Demonstrations will be on view from 11 a.m. on Jan. 24 to 4.15 p.m. on Jan. 25. A copy of the full programme may be obtained from the honorary secretary, Dr. W. H. McMenemey, Royal Infirmary, Worcester.

A meeting of the Royal Sanitary Institute will be held at South Shields Town Hall on Saturday, Jan. 25, at 10.15 a.m., when papers will be read by Dr. T. Lloyd Hughes on "The Future Public Health Responsibilities of Local Authorities" and by Lieut.-Col. John Reid on "The Present Trend of Local Government Administration from an Engineer's Point of View."

The Ministry of Supply will hold a disposal sale at its depot at Ashchurch, Gloucestershire, on Jan. 28–31; Feb. 4–7; and Feb. 11–14 (all dates inclusive). The sale includes a large quantity of medical equipment. Ashchurch is two miles from Tewkesbury and seven miles from Cheltenham, and sale catalogues are obtainable from Bruton Knowles and Co., Albion Chambers, Gloucester, or from Mr. G. Hone, 120, High Street, Tewkesbury.

Mr. P. H. Mitchiner will deliver an address before the Medico-Chirurgical Society of St. Mungo's College at Glasgow Royal Infirmary on Wednesday, Jan. 29, at 7.30 p.m. His subject is "Surgical Experiences in the Middle East."

On Jan. 29 the governors of Wembley Hospital will consider a scheme whereby the hospital will be amalgamated with the Charing Cross Hospital when the latter takes over its site at Northwick Park, where it intends building a teaching hospital. Investments and cash held by the Wembley Hospital, as well as private donations in future, would remain for its own use.

A course in diseases of the ear, nose, and throat, specially designed for paediatricians and school medical officers, will be given at Metropolitan Ear, Nose and Throat Hospital, Granville Place, W., on Saturday and Sunday, Feb. 1 and 2, from 10 a.m. to 4.30 p.m., and will include lectures and practical demonstrations. The class is limited to fifteen, and applications must be made to the Fellowship of Postgraduate Medicine, 1, Wimpole Street, W.1.

The National Association of Maternity and Child Welfare Centres and for the Prevention of Infant Mortality has arranged a conference on "Parentcraft and Homecraft," to be held at Friends' House, Euston Road, N.W., on Thursday, Jan. 30, at 10.30 a.m. The speakers will include Dr. Leslie Housden, at 10.40 a.m., on the need and scope of parentcraft, and Dr. John D. Kershaw, at 3 p.m., on the organization of parentcraft and homecraft teaching on a national basis. The fee for the conference is 7s. 6d., which includes a printed copy of the proceedings. Applications for tickets should be addressed to the secretary of the association, Miss M. R. Lovelock, at 5, Tavistock Place, London, W.C.1.

The Westminster Diocesan Catholic Doctors' Guild dinner and dance will be held at Dorchester Hotel, Thursday, Jan. 30, at 7 p.m., when His Eminence Cardinal Griffin will receive the guests. Tickets (£2 2s. each) can be had from the Honorary Secretary, 5, Wimpole Street, W.1.

Major-Gen. R. J. Blackham, C.B., C.M.G., C.I.E., D.S.O., M.D., has been re-elected a member of the Common Council of the Corporation of London for the twenty-second consecutive year. It was on the proposal of Gen. Blackham that the Corporation of London entertained the British Medical Association to a reception at the Guildhall as part of the Association's centenary celebrations in 1932, and he was chairman of the special committee of the Corporation which arranged the reception.

Lord Horder, chairman, Prof. Winifred Cullis, vice-chairman, and Mr. Cyril Bibby, hon. secretary, have announced the formation of the Family Relations Group. At present it comprises the British Social Hygiene Council, the Central Council for Health Education, the Eugenics Society, the Family Planning Association, the Family Welfare Association, the Marriage Guidance Council, the National Council for Maternity and Child Welfare, and the Pioneer Health Centre.

No. 52

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec. 28.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946 (a)	1946 (b)	1946 (c)	1946 (d)§	1946 (e)	1945 (Corresponding Week) (a)	1945 (b)	1945 (c)	1945 (d)	1945 (e)
Cerebrospinal fever	38	3	23	2	1	38	1	25	2	3
Deaths		1	—				—	—		
Diphtheria	180	10	71	56	10	514	30	165	130	19
Deaths	5	1	1		—	9	—	6	1	1
Dysentery	55	4	12	2	—	265	22	66	14	—
Deaths					—				—	—
Encephalitis lethargica, acute	—	—	—	—	—	2	—	—	—	—
Deaths		1					—			
Erysipelas			38	19	3			54	8	1
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				46					59	
Deaths	104	15	15		3	55	8	8	22	—
Measles*	7,068	229	224	67	325	565	69	58	303	2
Deaths	5	—	2		1	—	—	—	—	—
Ophthalmia neonatorum	41	2	11	—	—	50	9	17	—	—
Deaths										
Paratyphoid fever	6	2	—	—	—	5	—	1(A) 1(B)	1 (B)	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	760	41	16	10	6	1,118	91	14	14	3
Deaths (from influenza)†	33	5	6		—	72	9	5	—	2
Pneumonia, primary			389	51				276	55	
Deaths		63			10		64		8	10
Polio-encephalitis, acute	—	—	•			1	—			
Deaths		—					—			
Poliomyelitis, acute	1	—	—	18	—	25	2	—	—	—
Deaths		—					—			
Puerperal fever		1	10		—		2	20		
Deaths										
Puerperal pyrexia‡	90	4	7	—	—	94	4	7	3	—
Deaths		—					—			
Relapsing fever	—	—				—	—			—
Deaths										
Scarlet fever	943	67	299	44	33	1,376	126	252	43	30
Deaths	—	—	—		—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Typhoid fever	3	—	—	10	2	9	3	1	8	—
Deaths	1	—	—		—	2	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough*	1,149	82	146	80	36	724	44	24	104	5
Deaths	4	—	—		1	10	2	1	1	—
Deaths (0–1 year)	590	78	83		11	407	51	51	37	17
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	6,260	1031	758		166	5,704	850	686	165	142
Annual death rate (per 1,000 persons living)			16·7					15·6	10·6	
Live births	7,548	1018	1127		191	4,963	570	787	209	226
Annual rate per 1,000 persons living			22·7					15·7	13·5	
Stillbirths	220	22	38			205	21	36		
Rate per 1,000 total births (including stillborn)			33					44		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Totals for Eire notifications include those for the previous week.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, 16, 23, 30, Dec. 7, 14, 21, and 28.

EPIDEMIOLOGICAL NOTES

Infectious Diseases, 1946

A comparison of the number of notifications of infectious diseases with the preceding years is as follows:

	1940	1941	1942	1943	1944	1945	1946
Scarlet fever	65,573	59,111	84,932	116,217	93,801	74,392	57,614
Whooping-cough	53,403	171,406	65,563	95,859	93,107	62,022	92,028
Diphtheria	46,683	51,091	42,318	35,944	29,446	25,059	18,186
Measles	407,908	406,507	285,300	374,198	117,437	443,002	154,767
Acute pneumonia	47,712	50,214	42,487	52,225	38,175	34,059	36,106
Cerebrospinal fever	12,791	11,129	6,089	3,380	2,883	2,691	2,627
Dysentery	2,843	6,597	7,177	7,772	10,150	16,533	8,441
Enteric (typhoid and paratyphoid)	2,824	4,703	887	707	536	679	1,367
Deaths from influenza in the 126 great towns	5,510	2,993	1,544	6,280	1,744	1,307	2,629

A further large decline in the notifications of diphtheria was recorded for 1946, despite a poor start. The 6,220 notifications in the first quarter were slightly in excess of the 6,061 for the same period of 1945; the largest relative decline was in the fourth quarter, when 3,831 cases were reported as compared with 7,590 in the fourth quarter of 1945.

The notifications of scarlet fever were the lowest for the seven years reviewed. Measles and pneumonia were also less prevalent than usual. The incidence of cerebrospinal fever has apparently become stabilized at two to two and a half times the pre-war level after the epidemic in the early war years. Dysentery accounted for only half the number of cases recorded in the preceding year. There is no obvious explanation for this rapid decline and it may be due to variations in the standards of notification.

The rise in enteric fevers was partly due to an outbreak of typhoid in Aberystwyth. The increase in deaths from influenza in the 126 great towns was due to a relatively heavy incidence in the first quarter, when 2,156 deaths were registered as compared with 692 and 1,131 in the preceding first quarters. In the fourth quarter 221 deaths were returned against 395 and 317 in the same quarter of 1945 and of 1944.

Discussion of Table

In *England and Wales* infectious diseases were less prevalent. The decreases in notifications included measles 701, whooping-cough 437, scarlet fever 258, and diphtheria 63; the only increase was acute pneumonia 61.

The largest falls in the notifications of measles were Durham 205, Northumberland 200, and Warwickshire 146. An exception to the general trend was an increase in Yorkshire North Riding 106. The incidence of whooping-cough declined in most areas; the largest falls were Lancashire 65 and Yorkshire West Riding 57. A small decline in cases of scarlet fever occurred throughout the country, but the only decrease of any size was Lancashire 70.

There were 180 notifications of diphtheria—the smallest number ever recorded—the decreases during the week being Lancashire 42 (mainly in the C.B.s), Northumberland 11, and London 10. Dysentery was prevalent in only two areas: Lancashire, Preston R.D. 17, and Glamorganshire, Cardiff C.B. 14.

In *Scotland* decreases were recorded in the notifications of scarlet fever 31, whooping-cough 85, dysentery 19, and measles 16, while a small rise occurred in the incidence of acute primary pneumonia 24.

In *Northern Ireland* there was a decrease of 24 in the outbreak of measles in Belfast C.B.

Week Ending January 4

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,161, whooping-cough 2,030, diphtheria 242, measles 10,823, acute pneumonia 1,264, cerebrospinal fever 61, dysentery 65, paratyphoid 3, typhoid 5.

Corrections

Corrected figures for the notifications of diphtheria and measles for England and Wales were: for the week ended Dec. 14, diphtheria 299 and measles 6,986 (Lancaster 79 and 1,482); for the week ended Dec. 21, diphtheria 263; and for the week ended Dec. 28, diphtheria 180 and measles 7,068 (Stafford 6 and 184).

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Potency of Oestrogens

Q.—*A patient requires an oestrogen preparation for menopausal rheumatism. She is allergic to fish. She can take stilboestrol by mouth, but I have always found that menopausal rheumatism requires fairly large doses of stronger preparations. Are there any of these which are not made up in cod-liver oil?*

A.—It is difficult to compare the potency of various oestrogens, for their effects depend so much on the route of administration, esterification, the vehicle, and the spacing of doses. If the implication of this question is that natural oestrogens are more powerful than the synthetic ones, then it can be said that stilboestrol is two to five times more active than oestrone when both are given by mouth, and the effects of stilboestrol by mouth and of oestrone by injection are about equal. Oestradiol benzoate or diproprionate in oily solution and given by injection may, weight for weight, be more active than stilboestrol given by mouth, but any such advantage is cancelled out by the fact that stilboestrol can be given more frequently and in regular and equally spaced doses by the oral route. In practice it seems likely that 1.0 mg. of stilboestrol by mouth three times a day is at least as effective as twice-weekly intramuscular injections of 5.0 mg. of one of the esters of oestradiol. Moreover, the dose of stilboestrol can be readily and all too easily increased. Another synthetic oestrogen, dienoestrol, is often stated to be even more active than stilboestrol, but this has not yet been established.

In any case, however, it is doubtful whether it is wise or necessary to give large doses of oestrogens to a woman at or past the menopause. Stilboestrol given at the rate of 1 mg. three times a day for any length of time will almost certainly cause endometrial hyperplasia; and uterine haemorrhage, which may be heavy and prolonged, is likely to occur during or after treatment. If the "rheumatism" is due to lack of oestrogen it should respond to very much smaller doses of either stilboestrol or oestrone by mouth. If large doses are employed they should be given only for an initial period of two or three weeks in order to bring the condition under control, whereupon the dose should be decreased.

The nature of the oily solvent used for natural oestrogens is not usually disclosed by the makers of the various proprietary preparations. If for some special reason the use of such oily solutions is desirable, the makers of any particular preparation should be approached directly for an assurance that it does not contain fish oil.

Curare and Surgical Shock

Q.—*Whitacre and Fisher have shown that under curare alone patients found the pain of operation intolerable and welcomed the subsequent administration of cyclopropane. In other words the cerebrum is bombarded by painful stimuli arising at the site of operation. From practical experience there seems to me to be a real risk of producing surgical shock by maintaining anaesthesia at too light a level for the surgical procedure taking place. I have seen it stated that a light level of anaesthesia together with sufficient curare to produce the necessary relaxation is all that is necessary. If my reasoning is correct, is this very real danger of surgical shock resulting from insufficient additional anaesthesia fully appreciated by anaesthetists?*

A.—There is no conclusive evidence that curare extracts have an anaesthetic effect in normal doses. In very large quantities they have produced unconsciousness in man. There is some evidence that they interrupt conduction across the preganglionic synapses of the autonomic nervous system. The remarkable immunity of most patients from shock in severe operations where *d*-tubocurarine chloride has been used suggests either that painful stimuli *in the absence of any active reaction* are of no importance in the development of operative shock or that *d*-tubocurarine chloride has a specific protective effect comparable with that of nerve block.

Two patients were subjected to mid-thigh amputation under light first-plane anaesthesia, "tubarine" being used to ensure quiescence; in neither of these did any noticeable degree of shock develop. In my personal experience better results are obtained in abdominal operations with light anaesthesia and more "tubarine" than with moderately deep anaesthesia and less "tubarine." In either case it seems to be important to avoid so far as possible any active reaction to surgical stimuli. It must be understood that the views expressed are purely speculative, that the use of curare extracts in anaesthesia should be regarded as still in the experimental stage, that deaths have occurred during its administration, and that a close watch should be kept during any major operation for signs of the development of operative shock. In one prostatectomy shock did develop, and there it was unexpectedly severe for the degree of surgical trauma.

Cheiropompholyx

Q.—*A practising surgeon in India has a severe cheiropompholyx affecting the ring and middle fingers of his left hand. The hands are being constantly washed in all the usual antiseptics recommended for the treatment of this condition. Carbolic lotion, surgical spirit, and penicillin ointment have all failed to help. Can anything further be recommended?*

A.—Cheiropompholyx may be a secondary trichophytide reaction from ringworm infection of the feet and is not commonly due to direct infection of the skin of the hands. If that is the diagnosis in this case, then the fierce treatments which have been employed would have been better directed to the feet and will, in any case, be likely to aggravate the pompholyx if applied to the hands.

However, the great majority of cases of pompholyx of the hands are constitutional and nervous in origin and are aggravated by heat and moisture. Tab. phenobarbitone, gr. 1/4 (16 mg.), two or three times a day by mouth and the cessation of all local treatment to the hands might be more helpful. If any local treatment is employed it should be of a bland type, antiseptics and parasiticides being avoided. Dabbling the hands in saline or a weak lead lotion and the use of a calamine cream, and then perhaps very small fractional doses of unfiltered *x*-rays, would help. It is clearly necessary to establish the diagnosis and to assess the patient's health and temperament in relation to his environment.

Plastic Induration of the Penis

Q.—*What is plastic induration of the penis? What are the current views on its aetiology and treatment?*

A.—Little is known about the aetiology of plastic induration of the penis, or what is generally known as fibrous cavernositis. A few cases are due to some recognized local cause, such as infection. But the aetiology of the primary cases is obscure. Gout, diabetes, and rheumatism are sometimes mentioned as causes. Treatment is unsatisfactory, but usually after progressing for a time the trouble becomes stationary. I have seen cases improved by the application of small doses of radium. Recently Lowsley has again advocated operative treatment. This involves dissecting away the fibrous tissue which has formed on the dorsum of the penis between the two corpora cavernosa. As this trouble usually affects middle-aged men and never interferes with micturition, operation is required only in exceptional cases.

Legal Duration of Pregnancy

Q.—*What are the current views as to the maximum legal duration of pregnancy?*

A.—There is no legal maximum, or minimum, duration of pregnancy. Some countries have statutory limits but we have none, and when the point is raised our Courts hear medical evidence, which often includes the quotation of textbooks. A very interesting case in which the possible minimum was considered was *Clark v. Clark* (*Journal*, 1939, **1**, 647). Dr. D. J. A. Kerr (*Forensic Medicine*, 4th edition, p. 173) quotes a case in which the Court accepted a gestation period of 331 days. The practice of the Court is not to be bound by any hard and fast

rule but to take all the facts into account. I know of no reported case in which the Court has decided merely on the alleged length of pregnancy that the child was illegitimate.

Grittiness in the Eye

Q.—*What is the cause of the common ocular symptom of grittiness in the eye? A characteristic feature of this condition is that it is worse on waking.*

A.—There is no clear answer to this question. There are probably a number of different causes that can produce the sensation of grittiness in the eye. A not uncommon cause is the presence of small calcareous granules in the conjunctiva. These are fairly easily levered out by means of the sharp point of a cataract knife. The characteristic feature mentioned—that it is worse on waking—rather suggests that the symptom may arise from an excessive concentration of the solid contents of tears. This raises the complicated issue of minor metabolic disturbances. As an empirical measure your correspondent may find it worth while trying the effect of diuretics.

INCOME TAX

All inquiries will receive an authoritative reply but only a selection can be published.

Postgraduate Education for Medical Officers released from the Forces

Income Tax Liability

A question and reply in a recent issue of the *Journal* (Dec. 28, p. 1012) have aroused considerable interest, and a note clarifying the questions involved may help readers who are receiving payments under the Government scheme for postgraduate education to understand their position. There is a broad, and in theory at least a fairly clear, distinction to be drawn between a Government grant to enable the recipient to continue his professional training and a Government payment to facilitate such training by enabling the trainee to take up professional duties in such circumstances as will give him suitable opportunities for the further studies. In the actual working out of such schemes the sharp edge of the distinction becomes blurred; the recipient of, for instance, a training grant paid by the Ministry of Labour usually finds it very desirable and often necessary to do practical work which has an objective value, and the individual who holds a "post" and receives a "salary" may find his duties to be so light that the post is in effect a sinecure. But where income tax liability is concerned the fundamental distinction holds good. If the individual receives a training grant the conditions of which do not require him to perform duties, it is apparently accepted that the grant is not taxable income in his hands; if, on the other hand, the individual holds an employment or office of profit, then any sums receivable by virtue of that position are liable to tax.

The scheme for postgraduate education for medical officers is set out in a Ministry of Health circular (P.G. 5 (MED) R) in which a distinction is drawn between "vacancies in existing establishments" and vacancies arising from "the creation of additional posts." The position of medical officers filling the former class of post is quite clear; they are liable to perform, and in fact do perform, certain duties; they hold offices of profit and their salaries are taxable in the ordinary way. The second class is, perhaps, less clear. In those cases it may be that some individuals are fulfilling a merely nominal roll as medical officers, and, whether or not they are liable to render services to the hospital to which they are attached, are in fact doing no more than they would feel it necessary to do in an unrestricted course of study, and that the payment received is therefore a "subsistence allowance" and not a salary. Such cases may be open to doubt, but it seems not unlikely that a Court would regard them as "offices of profit" however small the actual service requirements might prove to be. Indeed, there is something Gilbertian in the alternative—namely, that because no work is required the "office" ceases to be one of profit. Taking the matter a step further, however, if a man who is attached to a hospital under this scheme and is paid accordingly is not legally under obligation to perform any duties, it would seem to follow that the element of employment does not enter into the matter, and in such a case the recipient might well have a claim to be regarded in the same light as a recipient of a Ministry of Labour grant. From one or two letters we have received on this matter, it appears that the writers regard themselves as under no obligation to perform services in the hospitals to which they are attached—or at most only negligible services—and the brief reply to the inquiry referred to above may have led to misunderstanding on the part of others who occupy a less abnormal position in the scheme.

Letters and Notes

Time Marches On

Dr. J. B. SAMSON (Romford) writes: Having recently reread Sir John Simon's admirable work, *English Sanitary Institutions*, I have from certain passages been endeavouring to draw an analogy between the proposed conditions of service for general practitioners under the National Health Service Act and the conditions of our "colleagues" that prevailed in ancient Rome. Apparently Julius Caesar and the earlier emperors encouraged the practice of medicine by granting to those who practised certain privileges—namely, the status of citizen and exemption from certain ordinary civil obligations, until in time such largesse was no longer required and practitioners existed in such excessive numbers that "the less employed among them were willing to lend a hand to the next-door function of corpse-bearing at funerals, or would even (more remotely from their profession) be ready to officiate as gladiators. Such being the overcrowdedness of the profession, Antoninus Pius found it prudent to restrict to a certain number of practitioners in each centre the immunities which had been so lavishly granted; and from the date of his law the medical immunity from local burdens might not be held by more than five practitioners in small cities nor more than ten in even the largest; while also, in general, the immunity could not be claimed by practitioners migrating into new districts. When the number of immunes was limited by law certain public duties were made to accompany the privilege . . . and later it was enacted that grants of privilege should be made on local responsibility; and the responsibility was assigned, as the law expresses it, that they who were most interested would make sure of the probity and skill of the persons to whom they had to entrust their own and their children's lives." At a comparatively late period in the city of Rome it was enacted that a local medical officer who, "knowing himself to be paid by salary for attending to the poor, must think of them rather than of the rich; and who, where there is a question of fees, must take as his standard not what men fearing for their lives will promise but what men recovering from sickness will offer; and when a vacancy occurred among these officers, the filling of it was not to be by favour or on solicitation of magnates, but the remaining district officers are to propose a man who shall be worthy of their ranks and of the dignity of the office and of the emperor's approval." Time indeed marches on.

Animal and Human Influenza

Dr. J. N. MCINTOSH (Stonetown, Glos.) writes: In the *Journal* of March 16, 1935 (p. 570), you kindly published an article from me under "Letters, Notes, etc.," entitled "Influenza: Epidemiology and Prophylaxis," in which I pointed out *inter alia* that whenever "animal influenza" occurred human influenza followed. From reports there is now occurring in this country "influenza" in horses and cats of an epidemic nature. Are these cases notified to the public health authorities? If not, could something be done about it by the Ministry of Health? If my theory is correct, it appears that with our present deficiency in fats and proper foods the stage is all set for a human influenza epidemic of even greater proportions than that of 1918–19.

Medical Art Society

The Medical Art Society is to be revived, and it is hoped to hold an exhibition of members' works in the summer. Doctors who do painting or sketching work are invited to communicate with the secretary, Dr. Henry Wilson, 142, Harley Street, London, W.1.

Correction

Dr. S. LIPETZ writes: The words "the enabling Bill demanded by Dr. Dain" in my letter in the *Journal* of Jan. 4 (p. 30) should read "the amending Act demanded by Dr. Dain."

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